

10591533.trn

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FILE 'HOME' ENTERED AT 15:37:00 ON 23 DEC 2009

==>

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STRUCTURE FILE UPDATES: 22 DEC 2009 HIGHEST RN 1198566-95-8  
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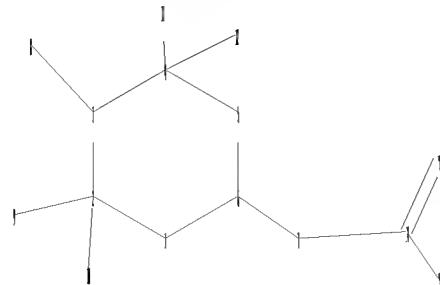
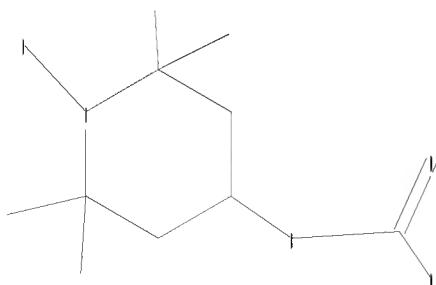
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=>  
Uploading C:\Program Files\Stnexp\Queries\10591533.str



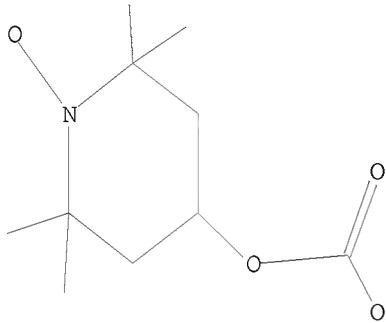
10591533.trn

chain nodes :  
7 14  
ring nodes :  
1 2 3 4 5 6  
ring/chain nodes :  
8 9 10 11 12 15 16  
chain bonds :  
2-9 2-10 3-8 4-11 4-12 6-7 7-14 14-15 14-16  
ring bonds :  
1-2 1-6 2-3 3-4 4-5 5-6  
exact/norm bonds :  
1-2 1-6 2-3 3-8 5-6 6-7 7-14 14-15 14-16  
exact bonds :  
2-9 2-10 3-4 4-5 4-11 4-12  
isolated ring systems :  
containing 1 :

Match level :  
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS  
11:CLASS 12:CLASS 14:CLASS 15:CLASS 16:CLASS

L1 STRUCTURE UPLOADED

=> d 11  
L1 HAS NO ANSWERS  
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s 11  
SAMPLE SEARCH INITIATED 15:37:54 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 5 TO ITERATE  
  
100.0% PROCESSED 5 ITERATIONS 1 ANSWERS  
SEARCH TIME: 00.00.01  
  
FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 5 TO 234  
PROJECTED ANSWERS: 1 TO 80

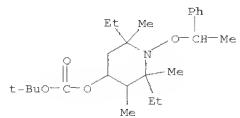
L2 1 SEA SSS SAM L1

10591533.trn

=> d scan

10591533.trn

L2 1 ANSWERS REGISTRY COPYRIGHT 2009 ACS on STN  
IN Carboxic acid, 2,6-diethyl-2,3,6-trimethyl-1-(1-phenylethoxy)-4-  
piperidinyl 1,1-dimethylethyl ester  
MF C25 H41 N O4



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

ALL ANSWERS HAVE BEEN SCANNED

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```
=> 1
1 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).
```

```
=> s 11 full
FULL SEARCH INITIATED 15:38:04 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 93 TO ITERATE
```

```
100.0% PROCESSED 93 ITERATIONS 33 ANSWERS
SEARCH TIME: 00.00.01
```

L3 33 SEA SSS FUL L1

```
=> file cpalus
'CPALUS' IS NOT A VALID FILE NAME
SESSION CONTINUES IN FILE 'REGISTRY'
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files
that are available. If you have requested multiple files, you can
specify a corrected file name or you can enter "IGNORE" to continue
accessing the remaining file names entered.
```

```
=> file caplus
FILE 'CAPLUS' ENTERED AT 15:38:13 ON 23 DEC 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 AMERICAN CHEMICAL SOCIETY (ACS)
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FILE COVERS 1907 - 23 Dec 2009 VOL 151 ISS 26
FILE LAST UPDATED: 22 Dec 2009 (20091222/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009
```

CAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

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<http://www.cas.org/legal/infopolicy.html>

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=> d his

(FILE 'HOME' ENTERED AT 15:37:00 ON 23 DEC 2009)

FILE 'REGISTRY' ENTERED AT 15:37:33 ON 23 DEC 2009

L1                   STRUCTURE UPLOADED  
L2                   1 S L1  
L3                   33 S L1 FULL

FILE 'CAPLUS' ENTERED AT 15:38:13 ON 23 DEC 2009

=> s 13  
L4                   67 L3

=> d cbib abs hitstr 1-  
YOU HAVE REQUESTED DATA FROM 67 ANSWERS - CONTINUE? Y/(N):y

L4 ANSWER 1 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:1315916 Document No. 151:5500670 Tetraarylphosphonium Salts as Soluble Supports for Oxidative Catalysts and Reagents. Roy, Marie-Noelle; Pepon, Jean-Christophe; Charette, Andre B. (Departement de Chimie, Universite de Montreal, Montreal, QC, H3C 3J7, Can.). Journal of Organic Chemistry, 74(22), 8510-8515 (English) 2009. CODEN: JOCEAH. ISSN: 0022-3263.

## OTHER

SOURCES: CASREACT 151:550067. Publisher: American Chemical Society.  
 AB Tetraarylphosphonium (TAP)-supported DMSO, TEMPO, and (diacetoxy)iodobenzene reagents were synthesized and used for the oxidation of alcs., including Swern oxidation, and for the  $\alpha$ -acetoxylation of ketones. By taking advantage of the predictable solubility properties of the TAP unit, simple precipitation and filtration of the phosphonium moiety permitted complete separation of the desired products. It was demonstrated that these

reagents could be recycled directly when used in catalytic processes and following regeneration when used in stoichiometric processes.

IT 867023-62-9P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); FACT (Reactant or reagent); USES (Uses)

(preparation of recyclable tetraarylphosphonium-supported DMSO,

TEMPO, and (diacetoxy)iodobenzene and use as reagent/catalysts in the oxidation of alcs. and acetoxylation of ketones)

RN 867023-62-9 CAPLUS

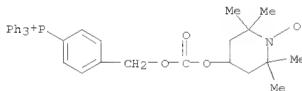
CN 1-Piperidinyl, 2,2,6,6-tetramethyl-4-[[[4-(triphenylphosphonio)phenyl]methoxy]carbonyl]oxy]-, perchlorate (1:1)

(CA INDEX NAME)

CM 1

CRN 867023-61-8

CMF C35 H38 N O4 P



CM 2

CRN 14797-73-0

CMF Cl O4

L4 ANSWER 1 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



IT 867023-64-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of recyclable tetraarylphosphonium-supported DMSO, TEMPO, and (diacetoxy)iodobenzene and use as reagent/catalysts in the oxidation of alcs. and acetoxylation of ketones)

RN 867023-64-1 CAPLUS

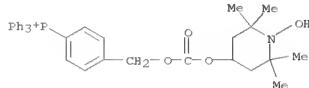
CN Phosphonium, [4-[[[1-hydroxy-2,2,6,6-tetramethyl-4-piperidinyl]oxy]carbonyl]oxy]methyl]phenyl]triphenyl-, perchlorate (1:1)

(CA INDEX NAME)

CM 1

CRN 867023-63-0

CMF C35 H39 N O4 P



CM 2

CRN 14797-73-0

CMF Cl O4



L4 ANSWER 2 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:1139409 Document No. 151:359933 Synthetic resin composition and automotive interior/exterior material comprising the same. Mizokawa, Shigeo; Negishi, Yoshihori (Adeka Corporation, Japan). PCT Int. Appl. WO 2009113389 A1 20090917, 32pp. DESIGNATED STATES: W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MV, MZ, NA, NG, NZ, NO, NZ, OM, PG, PR, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TQ, TM, TN, TR; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, MT, NE, NL, NO, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXX2D. APPLICATION: WO 2009-JP53341 20090225. PRIORITY: JP 2008-59576 20080310.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

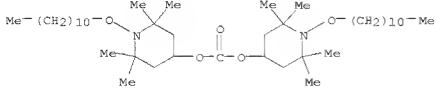
AB A synthetic resin composition with good weather resistance useful for automotive interior/exterior material comprising 100 parts synthetic resin, 0.01-20 parts component (A) and 0.01-20 parts component (B), wherein the component (A) is a hindered amine compound represented by general formula I ( $R = 1-30$  alkyl,  $C2-30$  alkenyl,  $n = 1-6$ ;  $R1 = Cl-22$  alkyl,  $C2-22$  alkenyl) or II ( $R = Cl-30$  alkyl,  $C1-30$  hydroxyalkyl,  $C2-30$  alkenyl;  $R2 = Cl-22$  alkyl,  $C2-22$  alkenyl; A = mono bond, Cl-12 linear or branched alkyl;  $n = 2-6$ ;  $X = -C(O)-$ ), and the component (B) is a sulfur-containing antioxidant.

IT 705257-84-7P  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(synthetic resin composition for automotive interior/exterior material)

RN 705257-84-7 CAPLUS

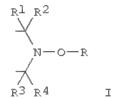
CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



L4 ANSWER 3 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:1131615 Document No. 151:314742 Woody synthetic resin composition having improved weather resistance and molded body thereof. Fukushima, Mitsuhiro; Mizokawa, Shigeo; Masumi (Adeka Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2009209205 A 20090317, 15pp.; Chemical Indexing

Equivalent to 151:314717 (WO) (Japanese). CODEN: JKXXAF. APPLICATION: JP 2008-51060 20080229.

GI



AB Disclosed are a woody synthetic resin composition having excellent weather resistance, and a molded body of the woody synthetic resin compn (e.g., ethylene-propylene copolymer). The woody synthetic resin composition is obtained by blending 5-200 parts by mass of wood flour and 0.01-5 parts by mass of a hindered amine compound having a partial structure represented by the general formula I per 100 parts by mass of a synthetic resin (R1, R2, R3 and R4 independently represent an alkyl group having 1-4 carbon atoms; and R represents an alkyl group having 1-18 carbon atoms, an alkyl group substituted by hydroxy group or a cycloalkyl group having 5-8 carbon atoms).

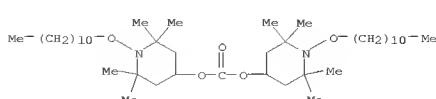
IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses)

(woody synthetic resin composition having improved weather resistance and molded body thereof)

RN 705257-84-7 CAPLUS

CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)





L4 ANSWER 7 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:1077233 Document No. 151:315867 Sealing compositions containing hydrolyzable silyl-containing polymers with suppressed peeling from glass.

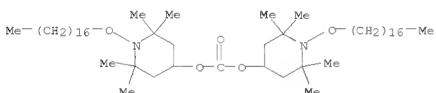
Okada, Teru; Murase, Masaki; Nakayama, Yoshimitsu (Sunstar Engineering Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2009197177 A 20090903, 16pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2008-42699 20080225. AB The compns., useful for sealing light-transmitting parts (e.g., glass), preferably with silicone sealants, contain the polymers and hindered amines bearing N-(C1-20-alkoxy)-2,2,6,6-tetramethyl-4-piperidyl groups. Thus, applying a sealant containing Epilon EP 505S (alkoxysilyl-terminated polyisobutylene) 160, Epikote 828 (epoxy resin) 6, Tinuvin 123 (HALS) 1, and S 1000 (silyl-crosslinkable reactive plasticizer) 40 parts to a primer-coated Al alloy sheet and bonding it to a float glass sheet via Penguinseal 2520 (silicone sealant) gave a test piece showing good interlayer adhesion and weather resistance.

IT 705257-84-7 863984-48-9 1185256-91-0

RL: MOA (Modifier or additive use); USES (Uses)  
 (light stabilizer; sealing compns. containing hydrolyzable silyl-containing polymers, and N-alkoxy HALS with suppressed peeling from glass)  
 RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



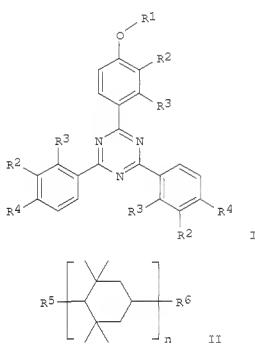
RN 863984-48-9 CAPLUS  
 CN 4-Piperidinol, 1-(heptadecyloxy)-2,2,6,6-tetramethyl-, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)



RN 1185256-91-0 CAPLUS  
 CN 4-Piperidinol, 1-butoxy-2,2,6,6-tetramethyl-, 4,4'-carbonate (CA INDEX NAME)

L4 ANSWER 8 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:916510 Document No. 151:222390 UV absorber compositions, light-resistant synthetic polymer compositions containing them, and films, sheets, and coatings comprising them. Yoshitake, Toshitaka; Tanaka, Tomoki; Kamimoto, Tetsuo (Adeka Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2009167416 A 20090730, 25pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2009-35773 20090218.

GI



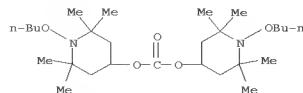
AB The UV absorber compns. contain triazine compds. of I (R1 = C1-12 alkyl, C3-8 cycloalkyl, C3-8 alkynyl, C6-18 aryl, C7-18 alkylaryl, C7-18 arylalkyl; R2 = H, C1-8 alkyl, C3-8 alkynyl; R3 = H, OH; R4 = H, OR1) and hindered amines of II (R5 = C1-12 alkyl, C1-12 alkoxy; R6 = carbonate, mono-, di-, tri-, or tetravalent organic carboxylic acid residue; n = 1-4).

Thus, a composition comprising triacetetyl cellulose (LT 35) 100, I (R1 = CH2CH2CH2CO2Me, R2 = Me, R3 = OH, R4 = OR1) 0.2, and II (R5 = OC11H23, R6 = carbonate, n = 2) 0.2 part was cast to give a film showing change in yellowness index (AYI) 0.22, 0.49, and 0.78 after a weathering test (83°, no rain, carbon arc) for 120, 240, and 360 h, resp.

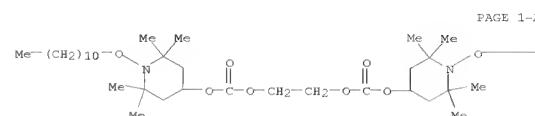
IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses)  
 (UV absorber; UV absorber compns. for light-resistant synthetic polymer films, sheets, and coatings)  
 RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)

L4 ANSWER 7 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



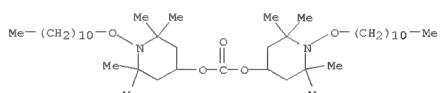
RN 1185256-92-1 CAPLUS  
 CN Carbonic acid, C,C'-1,2-ethanediyl C,C'-bis[2,2,6,6-tetramethyl-1-(undecyloxy)-4-piperidinyl] ester (CA INDEX NAME)



PAGE 1-A  
 —(CH2)10—Me

PAGE 1-B

L4 ANSWER 8 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



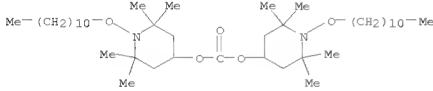
L4 ANSWER 9 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:735991 Document No. 151:79136 UV stabilized crosslinkable polyolefin compositions comprising acidic silanol condensation catalysts. Nylander, Perry (Borealis Technology Oy, Finland). PCT Int. Appl. WO 2009080235 A1 20090702, 33pp.; Chemical Indexing Equivalent to 151:79085 (EP)  
 DESIGNATED STATES: W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR,

BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NL, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, MT, NE, NL, NO, PT, SE, SN, TD, TG, TR. (English).  
 CODEN: PIIXXD2. APPLICATION: WO 2009-EP10653 20091215. PRIORITY: EP 2007-24836 20071220.

AB A polyolefin composition comprises a crosslinkable polyolefin with hydroxylable silane groups, and a silanol condensation catalyst, wherein the composition is characterized by excellent curing properties, namely, the maximum torque  $\Delta T$  is  $> 40$  Nm and the crosslinking speed is  $> 0.1$  Nm/s in the ice test, and retention of  $> 60\%$  of the elongation at break after 500 h in SEPAP UV exposure. Preferably, the polyolefin composition further comprises at least one UV stabilizer that is acidic ( $\text{pH} \leq 6.2$ , measured at 20–25° in 1% suspension). The polyolefin composition can be used for production of tubes and insulating layers for elec. wires and cables.

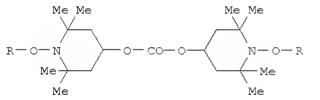
IT 705257-84-7  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (ADK-Stab LA 81; UV stabilized crosslinkable polyolefin compns. comprising acidic silanol condensation catalysts)

RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



L4 ANSWER 11 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:671515 Document No. 150:565321 Resin composition and resin molded article with good weather resistance. Mizokawa, Shigeo; Negishi, Yoshinori (Adeka Corp., Japan). Jpn. Kokai Tokyo Koho JP 2009120723 A 20090604, 14pp.; Chemical Indexing Equivalent to 150:565158 (WO) (Japanese). CODEN: JXKXAF. APPLICATION: JF 2007-296312 20071115.

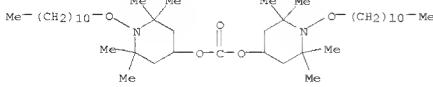
GI



AB Disclosed is a resin composition containing zinc sulfide and having excellent weather resistance. Also disclosed is a resin molded article obtained by using such a resin composition. Specifically disclosed is a resin composition obtained by blending 0.1–20 parts by weight of zinc sulfide (A) and 0.01–20 parts by weight of a hindered amine compound (B) having a structure represented by the general formula I (R independently representing an alkyl group having 1–18 carbon atoms which may be substituted by a hydroxyl group, an acyl group having 1–18 carbon atoms, or a cycloalkyl group having 5–8 carbon atoms), per 100 parts by weight of a resin.

IT 705257-84-7  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (resin composition and resin molded article with good weather resistance)

RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



L4 ANSWER 10 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:756280 Document No. 151:79085 UV stabilized crosslinkable polyolefin compositions comprising acidic silanol condensation catalysts. Nylander, Perry (Borealis Technology Oy, Finland). Eur. Pat. Appl. EP 2072568 A1 20090624, 17pp.; Chemical Indexing Equivalent to 151:79136 (WO)  
 DESIGNATED STATES: R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,

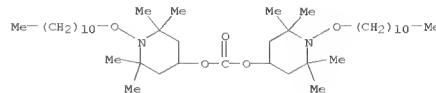
GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS. (English). CODEN: EPXXDW. APPLICATION: EP 2007-24836 20071220.

AB A polyolefin composition comprises a crosslinkable polyolefin with hydroxylable silane groups, and a silanol condensation catalyst, wherein the composition is characterized by excellent curing properties, namely, the maximum torque  $\Delta T$  is  $> 40$  Nm and the crosslinking speed is  $> 0.1$  Nm/s in the ice test, and retention of  $> 60\%$  of the elongation at break after 500 h in SEPAP UV exposure. Preferably, the polyolefin composition further

comprises at least one UV stabilizer that is acidic ( $\text{pH} \leq 6.2$ , measured at 20–25° in 1% suspension). The polyolefin composition can be used for production of tubes and insulating layers for elec. wires and cables.

IT 705257-84-7, ADK-Stab LA 81  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (ADK Stab LA 81; UV stabilized crosslinkable polyolefin compns. comprising acidic silanol condensation catalysts)

RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



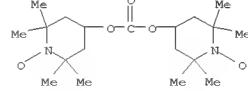
L4 ANSWER 12 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:655567 Document No. 151:57243 Compound polymerization inhibitor and its application. Zhang, Tianlin; Liu, Lin; Zhou, Jieying (Huaihai Institute of Technology, Peop. Rep. China). Faming Zhanli Shengqing Gongkai Shuomingshu CN 101440286 A 20090527, 6pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 2010-176117 20081103.

AB The title polymerization inhibitor comprises components A, B and C at a mass ratio of (10–50):(20–80):(30–70). Component A comprises tri(1-oxy-2,2,6,6-tetramethylpiperidine-4-oxy)phosphite (TTMPP), bis(1-oxy-2,2,6,6-tetramethylpiperidine-4-oxy)carbonate (BTMPPC) and (1-oxy-2,2,6,6-tetramethylpiperidine-4-oxy)acetate (DTMPE). Component B comprises 4,6-dinitro-2-sec-But phenol (DNBP), 4,6-dinitro p-cresol (DNPC) and 4,6-dinitro-o-cresol (DNOC). Component C comprises 3,5-dimethylthio-2,4-diamino toluene,

2,6-dimethylthio-1,4-diaminobenzene and 4,6-dimethylthio-1,3-diaminobenzene. The invented polymerization inhibitor is liquid at low temperature, and used in production or purification of styrene, divinylbenzene, p-chloromethyl styrene, 2-vinyl pyridine, 4-vinyl pyridine, polyol acrylate, etc.

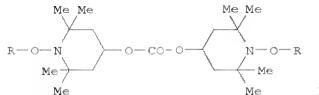
IT 6146-58-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (compound polymerization inhibitors)

RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl-



L4 ANSWER 13 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:618497 Document No. 150:5651580 Resin composition and resin molded article with good weather resistance. Mizokawa, Shigeo; Negishi, Yoshinori (Adeka Corporation, Japan). PCT Int. Appl. WO 2009063708 A1 20090522, 24pp.; Chemical Indexing Equivalent to 150:565321 (JP)  
 DESIGNATED STATES: W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LB, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT; BW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, MT, NE, NL, NO, PT, SE, SN, TD, TG, TR. (Japanese).  
 CODEN: PIIXD2. APPLICATION: WO 2008-JP68293 20081008. PRIORITY: JP 2007-296312 20071115.

GI



AB Disclosed is a resin composition containing zinc sulfide and having excellent weather resistance. Also disclosed is a resin molded article obtained by using such a resin composition. Specifically disclosed is a resin composition obtained by blending 0.1-20 parts by weight of zinc sulfide (A) and 0.01-20 parts by weight of a hindered amine compound (B) having a structure represented by the general formula I (R independently representing an alkyl group having 1-18 carbon atoms which may be substituted by a hydroxyl group, an acyl group having 1-18 carbon atoms, or a cycloalkyl group having 5-8 carbon atoms), per 100 parts by weight of a resin.

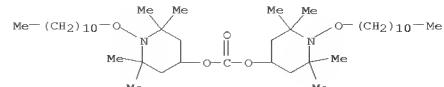
IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses)  
 (resin composition and resin molded article with good weather resistance)

RN 705257-84-7 CAPLUS

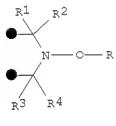
CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)

L4 ANSWER 13 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)

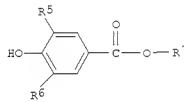


L4 ANSWER 14 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:583530 Document No. 150:540727 Synthetic resin composition useful for automotive interior/exterior material. Mizokawa, Shigeo; Negishi, Yoshinori (Adeka Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2009102556 A 20090514, 18pp.; Chemical Indexing Equivalent to 150:473711 (WO) (Japanese). CODEN: JXKXXAF. APPLICATION: JF 2007-277139 20071025.

GI



II



AB The composition, having good weather resistance, contains 100 parts synthetic resin, 0.01-20 parts a hindered amine compound (A) having a partial structure represented by a general formula I, and 0.01-20 parts a benzene compound (B) represented by a general formula II, wherein R1-R4 = C1-4 alkyl, R = optionally hydroxy-substituted C1-18 alkyl, or C5-8 cycloalkyl; R5, R6 = C1-8 alkyl, R7 = C1-30 alkyl, C6-30 aryl, C7-30 alkyl, C7-30 dialkyl aryl, C7-30 trialkyl aryl, or C7-30 aryl alkyl; and the ratio of A/B is 1:1-1:5. Thus, ethylene-propylene copolymer 85, talc 15, gray pigment 3.0, pentaerythritol 3-(4-hydroxy-3,5-di-tert-butylphenyl) phosphite 0.1, calcium stearate 0.1, tris(2,4-di-tert-butylphenyl) phosphite 0.1, calcium stearate 0.1, 1-undecyloxy-2,2,6,6-tetramethyl-4-piperidinol carbonate 0.1, and hexadecyl 3,5-di-tert-butyl-4-hydroxybenzoate 0.1 parts

were kneaded at 230° to give a title composition

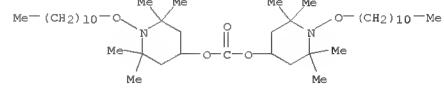
IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses)  
 (synthetic resin composition useful for automotive interior/exterior material)

RN 705257-84-7 CAPLUS

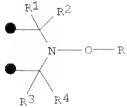
CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)

L4 ANSWER 14 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)  
 INDEX NAME)

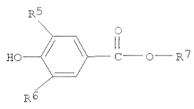


L4 ANSWER 15 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:519143 Document No. 150:4737110 Synthetic resin composition useful for automotive interior/exterior material. Mizokawa, Shigeo; Negishi, Yoshinori (Adeka Corporation, Japan). PCT Int. Appl. WO 2009054267 A1  
 20090430, 26pp.; Chemical Indexing Equivalent to 150:540727 (JP)  
 DESIGNATED STATES: W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH,  
 BR,  
 BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM,  
 KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN,  
 MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC,  
 SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT; RW: AT, BE, BF,  
 BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT,  
 LU, MC, ML, MR, MT, NE, NL, NO, PT, SE, SN, TD, TG, TR. (Japanese).  
 CODEN: PIXXD2. APPLICATION: WO 2008-JP68289 20091008. PRIORITY: JP  
 2007-277139 20071025.

GI



I



II

AB The composition, having good weather resistance, contains 100 parts synthetic resin, 0.01-20 parts a hindered amine compound (A) having a partial structure represented by a general formula I, and 0.01-20 parts a benzoate compound (B) represented by a general formula II, wherein R1-R4 = C1-4 alkyl, R = optionally hydroxy-substituted C1-8 alkyl, or C5-8 cycloalkyl; R5, R6 = C1-8 alkyl, R7 = C1-30 alkyl, C6-30 aryl, C7-30 alkyl, C7-30 dialkyl aryl, C7-30 trialkyl aryl, or C7-30 aryl alkyl; and the ratio of A/B is 1.1-1.5. Thus, ethylene-propylene copolymer 85, talc 15, gray pigment 3.0, pentaerythritol 3-(4-hydroxy-3,5-di-tert-butyphenyl) propionate 0.1, tris(2,4-di-tert-butylphenyl) phosphite 0.1,

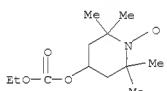
L4 ANSWER 16 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2009:426827 Document No. 150:4271930 Dye-sensitized solar cell containing nitroxy radical compound in electrolyte layer. Nanbu, Yoko (Adeka Co., Ltd. Japan). Jpn. Kokai Tokkyo Koho JP 2009076369 A 20090409, 14pp. (Japanese). CODEN: JKXKAF. APPLICATION: JP 2007-245519 20070921.

AB In the dye-sensitized solar cell having an electrode substrate, a transparent conductive layer, a dye-adsorbed metal oxide layer, an electrolyte layer, another transparent conductive layer, and a counter electrode in this order, the electrolyte layer contains nitroxy radical compound (acting as redox mediator). The solar cell has improved electromotive force, maximum output, and cycle performance.

IT 289493-43-0

RN: CAT (Catalyst use); USES (Uses)  
 (redox mediators; dye-sensitized solar cell containing nitroxy radical compound in electrolyte layer)

RN 289493-43-0 CAPLUS  
 CN 1-Piperidinyloxy, 4-[(ethoxycarbonyl)oxy]-2,2,6,6-tetramethyl- (CA INDEX NAME)



L4 ANSWER 15 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)  
 calcium stearate 0.1, 1-undecyloxy-2,2,6,6-tetramethyl-4-piperidinol carbonate 0.1, and hexadecyl 3,5-di-tert-butyl-4-hydroxybenzoate 0.1 parts

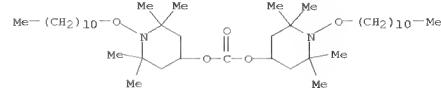
were kneaded at 230° to give a title compn.

IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses)  
 (synthetic resin composition useful for automotive interior/exterior material)

RN 705257-84-7 CAPLUS

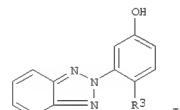
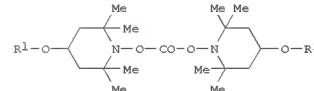
CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



L4 ANSWER 17 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2008:1173870 Document No. 149:4033500 Vinyl chloride polymer waterproof sheet with good weather resistance. Mitsudera, Taro; Sengoku, Tadashi; Yonezawa, Yutaka (Adeka Corporation, Japan). PCT Int. Appl. WO  
 2008117575

Al 20081002, 20 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK', DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID', IL, IN, IS, KE, KG, KM, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY', MA, MD, ME, MG, MK, MN, MZ, MY, NG, NG, NG, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, MT, NE, NL, NO, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2008-JP52240 20080212. PRIORITY: JP 2007-80780 20070327.

GI



AB The waterproof sheet is made of a vinyl chloride resin composition comprising

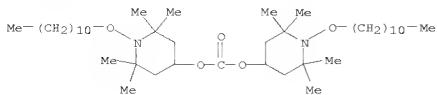
(A) 100 parts a vinyl chloride resin, (B) 5-100 parts a plasticizer, (C) 0.05-5 parts a hindered amine compound I (R1, R2 = C4-20 alkyl, C5-6 cycloalkyl), and (D) 0.05-5 parts a benzotriazole UV absorber II (R3 = C1-12 alkyl).

IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses)  
 (vinyl chloride polymer waterproof sheet with good weather resistance)

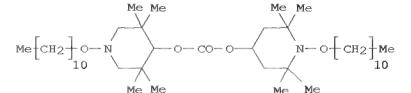
RN 705257-84-7 CAPLUS

CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



L4 ANSWER 18 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2008:1069425 Document No. 149:3332270 Hindered alkoxyamine-containing acidic polymer compositions with long-lasting weather resistance. Negishi, Yoshihori; Dobugawa, Shigeo (Adeka Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2008202005 A 20080904, 11pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 2007-42883 20070222.

GI



AB Title compns., useful for agricultural films, etc., contain 100 parts acid group-containing polymers and 0.005-30 parts hindered amines having partial structures  $\text{CH}_2\text{CR}_1\text{R}_2\text{N}(\text{OR})\text{CR}_3\text{R}_4\text{CH}_2$  [R<sub>1</sub>-4 = C<sub>1</sub>-4 lower alkyl; R = C<sub>1</sub>-8 alkyl (substituted with OH), C<sub>5</sub>-8 cycloalkyl]. Thus, a composition comprising block

polypropylene 95, Youmex 1001 (maleated polypropylene) 5, Ca stearate 0.05, tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionyloxy]methane 0.1, tris(2,4-di-tert-butylphenyl) phosphite 0.1, and I 0.2 part was injection-molded to give a test piece showing initial yellowness index 23.0 and cracking time 1104 h in a sunshine weathering test (83°, no raining).

IT 705257-84-7

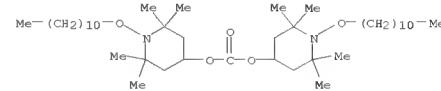
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (stabilizer; hindered alkoxyamine-containing acidic polymer compns.

with

long-lasting weather resistance)

RN 705257-84-7 CAPLUS

CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)

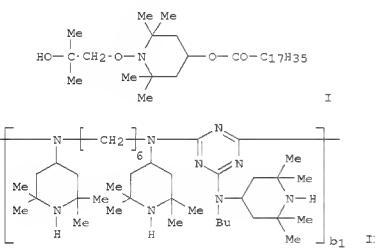
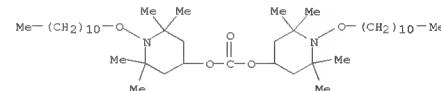


Rauquet, Jean-Roch; Judge, Anthony; Meyer, Hanspeter (Ciba Holding Inc., Switz.). PCT Int. Appl. WO 2008077830 A2 20080703, 55pp. DESIGNATED STATES: W1, AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, IS, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KE, LA, LC, LZ, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MV, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, MT, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.

APPLICATION: WO 2007-EP64023 20071217. PRIORITY: EP 2006-127222

20061227.

GI



AB A multifilament, a monofilament, a non-woven or a tape, each having 1 - 2000 Denier per filament and a draw ratio of 1:2 - 1:11 and each made of a composition containing the components (A) a polyolefin, (B) 2 hindered amines,

e.g., I and II (b1 = 2-20), and optionally (C) one or more inorg. and/or organic pigments.

IT 705257-84-7

RL: MOA (Modifier or additive use); USES (Uses) (light stabilizer; manufacture of multifilament, monofilament, nonwoven or

tape containing hindered amine additives)

RN 705257-84-7 CAPLUS

CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)

L4 ANSWER 20 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2008:371532 Document No. 151:338217 Superior light stabilization using a novel hindered amine light stabilizer. Negishi, Yoshinori; Kawamoto, Naoshi; Yukino, Toshihori (Polymer Additives R+D Laboratory, ADEKA Corporation, 5-2-13, Shirahata, Minami-ku, Saitama City, Saitama, 336-0022, Japan). Addcon World 2007, International Plastics Additives and

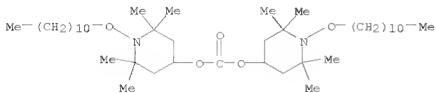
Compounding Conference, 13th, Frankfurt, Germany, Sept. 5-6, 2007, 9/1-9/8. Smithers Rapra Technology Ltd.: Shrewsbury, UK. ISBN: 978-1-84735-018-3. (English) 2007. CODEN: 69KMT6.

AB The degradation of agricultural films made of polyethylene stabilized with hindered amine light stabilizer ADK Stab LA 81 and a conventional antioxidant package was investigated. The HALS showed excellent light stabilizing activity under acidic conditions of sulfur fumigation and sulfuric acid treatment.

IT 705257-84-7, ADK Stab LA 81  
 RL: MOA (Modifier or additive use); USES (Uses) (stabilization of polyethylene with hindered amine light stabilizers)

RN 705257-84-7 CAPLUS

CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)

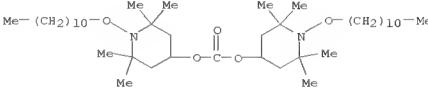


AB The invention relates to a process for the preparation of a sterically hindered nitroxyl ether from the corresponding sterically hindered radical by reacting it with a carbonyl compound and a hydroperoxide. The compds. prepared by this process are effective stabilizers for polymers against harmful effects of light, oxygen and/or heat, as flame-retardants for polymers and as polymerization regulators. Several nitroxyl radicals

underwent alkylation with carbonyl compds. in the presence of a metal catalyst and hydroperoxide to give the corresponding nitroxyl ethers.

IT 705257-84-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of hindered nitroxyl ethers via radical alkylation of nitroxyl radical with carbonyl compds. in the presence of hydroperoxide)

RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



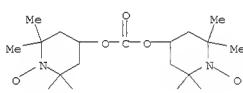
L4 ANSWER 22 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2007:1173851 Document No. 147:450127 Rubber compositions with good processability and their pneumatic tires. Negishi, Yoshinori; Ayabe, Takashi; Tobita, Etsuo; Takeuchi, Takashi (ADEKA Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 20072659911 A 20071018, 10pp. (Japanese). CODEN: JKXKA. APPLICATION: JP 2006-95351 20060330.

AB Title compns. contain 100 parts rubber and 0.01-20 parts bis(1-oxy-2,2,6,6-tetramethylpiperidin-4-yl) carbonate (I). Thus, 4-hydroxy-1-oxy-2,2,6,6-tetramethylpiperidin was reacted with di-Me carbonate in the presence of NaOMe to give I. A composition containing

100 parts natural rubber, 1 part I, 50 parts C black, 3 parts Zn flower, 2 parts stearic acid, and 1 part antioxidant showed Mooney viscosity 58, 60, and 64 after kneading for 3 min, 5 min, and 7 min, resp.

IT 6146-58-3  
 RL: IMP (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
 (Bis(oxytetramethylpiperidinyl) carbonate-containing rubber compns. with good processability for pneumatic tires)

RN 6146-58-3 CAPLUS  
 CN 1-Piperidinolxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



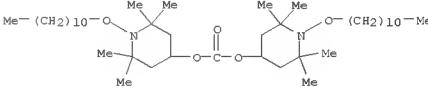
L4 ANSWER 23 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2007:1152194 Document No. 151:9581 Highly functional light stabilizer for polyolefin. Ayabe, Takashi (Lab. for Resin Additive, ADEKA Co., Ltd., 5-2-13 Shirahata, Minami-ku, Saitama-shi, 336-0022, Japan). Purasuchikusu, 58(9), 40-41 (Japanese) 2007. CODEN: PRSHAW. ISSN: 0555-7897. Publisher: Kogyo Chosakai.

AB The author has discussed on agricultural films which have high UV stability, particularly polyolefin films, more particularly polyethylene films, using specific highly functional light stabilizer such as ADK Stab LA 81 manufactured by Asahi Denka. The paper has indicated that the

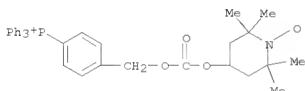
light stabilizer (ADK Stab LA 81) has low basicity and therefore shows high light stability compared to conventional light stabilizers such as HALS.

IT 705257-84-7  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (highly functional light stabilizer for polyolefin)

RN 705257-84-7 CAPLUS  
 CN 4-Piperidinol, 2,2,6,6-tetramethyl-1-(undecyloxy)-, 4,4'-carbonate (CA INDEX NAME)



L4 ANSWER 24 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2007:941788 Document No. 147:2777280. Preparation of Phosphonium salts derivatives and their use in organic synthesis. Charette, Andre; Poupon, Jean-Christophe; Boezio, Alessandro (Valorisation-Recherche, Can.).  
 U.S. Pat. Appl. Publ. US 20070197477 A1 20070823, 33pp., Cont.-in-part of Appl.  
 No. PCT/CA05/000523. (English). CODEN: USXCCO. APPLICATION: US 2006-533075 20061005. PRIORITY: US 2004-560592P 20040409; WO 2005-CA523 20050406.  
 AB Title compds. are prepared and their use in organic synthesis is described.  
 Thus, reaction of (3-diphenylphosphinophenyl)triphenylphosphonium bromide (preparation given) with LiClO<sub>4</sub> in MeCN gave 95% [(Ph<sub>2</sub>PC<sub>6</sub>H<sub>4</sub>)PPh<sub>3</sub>]<sub>2</sub>ClO<sub>4</sub> which was used as reagent for Mitsunobu coupling reaction of menthol with 4-nitrobenzoic acid.  
 IT 867023-63-9  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of phosphonium salts derivs. and their use as reagent in organic synthesis)  
 RN 867023-63-9 CAPLUS  
 CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-[[[4-(triphenylphosphonio)phenyl]methoxy]carbonyloxy]-, perchlorate (1:1) (CA INDEX NAME)  
 CM 1  
 CRN 867023-61-8  
 CMF C35 H38 N O4 P



CM 2

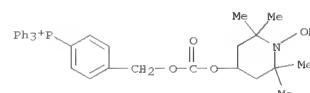
CRN 14797-73-0  
CMF C1 O4

L4 ANSWER 24 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



IT 867023-64-1  
 RL: RCT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of phosphonium salts derivs. and their use as reagent in organic synthesis)  
 RN 867023-64-1 CAPLUS  
 CN Phosphonium, 1-[[[[1-hydroxy-2,2,6,6-tetramethyl-4-piperidinyloxy]carbonyloxy]methyl]phenyl]triphenyl-, perchlorate (1:1) (CA INDEX NAME)

CM 1

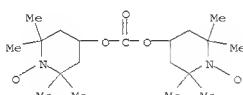
CRN 867023-63-0  
CMF C35 H39 N O4 P

CM 2

CRN 14797-73-0  
CMF C1 O4

L4 ANSWER 25 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2007:729700 Document No. 147:118641 Nitroxyl compound, and polymerization inhibitor and polymerization inhibitor composition using same. Negishi, Yoshihori; Tobita, Etsuo; Ayabe, Takashi (Adeka Corporation, Japan). PCT Int. Appl. WO 2007074613 A1 20070705, 21pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BE, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LS, LK, LR, LS, LT, LU, LV, LN, MA, MD, MG, MK, MN, MM, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TZ, UA, UG, RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, FI, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2006-07324377 20061206. PRIORITY: JP 2005-375673 20051227.

AB Disclosed is a compound having low volatility, high nitroxyl group concentration and excellent polymerization inhibitory activity. Also disclosed are a polymerization inhibitor and polymerization inhibitor composition using such a compound. Specifically disclosed are a nitroxyl compound represented by the formula (I) below, and a polymerization inhibitor and polymerization inhibitor composition using such a nitroxyl compound, e.g. bis(4-hydroxy-2,2,6,6-tetramethylpiperidinoxy) carbonate. IT 6146-59-3  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses); (nitroxyl compound, and polymerization inhibitor and polymerization inhibitor composition using same)  
 RN 6146-59-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



L4 ANSWER 26 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2007:402380 Document No. 146:4225020 Piperidyl group-containing arene monomers, their (co)polymers with high NO content, and preparation thereof. Nanbu, Yoko; Taki, Takayuki (Adeka Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2007091811 A 20070412, 25pp. (Japanese). CODEN: JKXKAF. APPLICATION: JP 2005-280285 20050927.

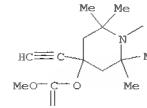
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title monomers are represented by I or II (R, R<sub>1</sub> = O-liberating group carbamoyloxy), and are polymerized at -5-30° (in the presence of Ni complex catalysts) to afford the title polymers having unit III or IV (R<sub>2</sub>-R<sub>4</sub> = O-liberating group, carbamoyloxy) m, k = 1-100; n = 0-100). The polymers are useful for light stabilizers, conductivity-imparting agents, battery electrode materials, etc. Thus, 4-hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy was reacted with 5.11 g NaH in THF and then with 16.58 g propargyl bromide in THF to give 4-propargyloxy-2,2,6,6-tetramethyl-1-piperidinyloxy, which was then reacted with t-BuOK in DMSO at 35° to give 4-allyloxy-2,2,6,6-tetramethyl-1-piperidinyloxy (V) in 90.0% yield. Then, V was polymerized in the presence of [( $\pi$ -allyl)-Ni(OOCOCF<sub>3</sub>)<sub>2</sub>]<sub>2</sub>PPh<sub>3</sub> (prepared from dicyclopentadienylnickel and allyl triflate) at 25° to give a polymer (redox behavior given) with Mn 21,750 in 71.4% yield.

IT 934214-95-6  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (piperidyl-containing arene monomers forming nitroxyl-rich polymers useful for light stabilizers or conductors)

RN 934214-95-6 CAPLUS  
 CN 1-Piperidinyloxy, 4-ethynyl-4-[(methoxycarbonyl)oxy]-2,2,6,6-tetramethyl- (CA INDEX NAME)



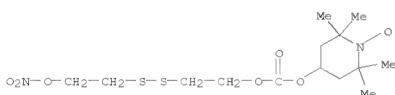
L4 ANSWER 27 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN 2006:191376 Document No. 144:2737550 Preparation of prodrugs containing novel biocleavable linkers. Satyam, Apparao (Nicholas Piramal India Ltd., India). U.S. Pat. Appl. Publ. US 20060046967 A1 20060302, 181 pp. (English). CODEN: USXXCO. APPLICATION: US 2005-213390 20050826. PRIORITY: US 2004-604632B 20040826; IN 2005-MU779 20050701.

AB The invention provides compds. D1-L1-E-A-B-A1-E-(L-E-A1-B-E)0-2-L2-D2 [B] is a bond,  $(\text{CH}_2\text{CH}_2\text{O})$ 1-1000, S-S, S-SO, S-SO<sub>2</sub> or S-S-NH; A, A1 are independently a bond,  $(\text{CH}_2)$ 1-8, 1,2-, 1,3- or 1,4-phenylene; D1 is a therapeutic agent having one or more functional groups OH, SH, NHRI, CO<sub>2</sub>H, CONHRI, O<sub>2</sub>CNR1, SC<sub>2</sub>NHRI, NR1CONHNHRI or NR1SO<sub>2</sub>NHRI (R1 is H, alkyl, aryl, etc.); D2 is D1, a peptide, protein, monoclonal antibody, vitamin, NO, NO<sub>2</sub>, NONOate, a nitric oxide-releasing group, a polymer, etc.; E is independently CH<sub>2</sub> or a bond; L1, L2 are independently a bond, O, S, NR1, L, or a linkage] or their pharmaceutically-acceptable salts for use as prodrugs, including NO-releasing prodrugs. Thus, aspirin prodrug 2-AcCo<sub>2</sub>H4CONH<sub>2</sub>CH<sub>2</sub>SSCH<sub>2</sub>CH<sub>2</sub>NO<sub>2</sub> was prepared and shown to release salicylate in rats in a sustained and controlled manner starting from 1 h through 12 h.

IT 877865-31-1P RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of prodrugs containing novel biocleavable linkers)

RN 877865-31-1 CAPLUS

CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-[[2-[[2-(nitrooxy)ethyl]dithio[ethoxy]carbonyl]oxy]- (CA INDEX NAME)



L4 ANSWER 28 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)

CM 2  
CRN 14797-73-0  
CMF C1 O4

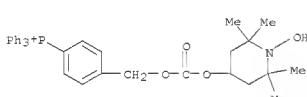


IT 867023-64-1P RL: RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation of phosphonium salts derivs. and their use as solubility controlling auxiliaries)

RN 867023-64-1 CAPLUS

CN Phosphonium, [4-[[[[1-hydroxy-2,2,6,6-tetramethyl-4-piperidinyloxy]carbonyl]oxy]methyl]phenyl]triphenyl, perchlorate (1:1) (CA INDEX NAME)

CM 1  
CRN 867023-63-0  
CMF C35 H39 N O4 P



CM 2

CRN 14797-73-0  
CMF C1 O4



L4 ANSWER 28 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN 2005:1130651 Document No. 143:4060110 Phosphonium salts derivatives and their use as solubility controlling auxiliaries. Charette, Andre; Poupon,

Jean-Christophe; Boezio, Alessandro (Valorisation-Recherche, Societe en Commandite, Can.). PCT Int. Appl. WO 2005097812 A1 20051020, 101 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW,

BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JE, KE, KG, KM, KR, KB, KZ, LC, LM, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZB, ZM, ZW; RW: AT, BE, BF, BJ, BR, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXKD2.

APPLICATION: WO 2005-CM523 20050406. PRIORITY: US 2004-560592F 20040409. AB The present invention relates to the use of compds. A3P or [A3P+L1]X- (A = various (un)substituted groups such as furyl, Ph, pyridyl, naphthyl, or thiophenyl; X = anion; L1 = a linker, as solubility controlling auxiliaries).

Thus, preparation of [3-Ph3P+CH2Ph2]ClO4- is described in several steps starting from 1,3-dibromobenzene, and was used as reagent for Mitsunobu reaction of menthol with p-nitrobenzoic acid. These compds. can also be used as solubility controlling fragments of a mol. The invention also relates to various methods of controlling the solubility of a mol. or a substrate.

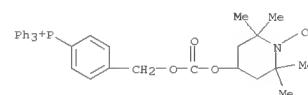
Moreover, the invention also relates to various phosphonium supported reagents or various phosphonium salts derivs.

IT 867023-62-9P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation of phosphonium salts derivs. and their use as solubility controlling auxiliaries)

RN 867023-62-9 CAPLUS  
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-[[[4-(triphenylphosphonio)phenyl]methoxy]carbonyl]oxy]-, perchlorate (1:1) (CA INDEX NAME)

CM 1

CRN 867023-61-8  
CMF C35 H38 N O4 P



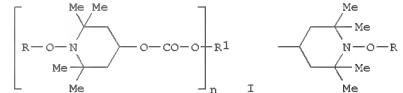
L4 ANSWER 29 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN 2005:977018 Document No. 143:2872080 Weakly basic hindered amines having carbonate skeletons for synthetic resin compositions and coating compositions with good long term stability and acid rain and chemical resistance. Negishi, Yoshinori; Ayabe, Takashi; Tobita, Etsuo (Asahi Denka Co., Ltd., Japan). PCT Int. Appl. WO 2005082852 A1 20050909, 39

PP. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY,

BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JE, KE, KG, KM, KR, KB, KZ, LC, LM, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZB, ZM, ZW; RW: AT, BE, BF, BJ, BR, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXKD2.

APPLICATION: WO 2005-JP3807 20050228. PRIORITY: JP 2004-57297 20040302.

GI



AB The present invention relates to hindered amines I, wherein R = C1-30 (hydroxy)alkyl or C2-30 alkenyl; n = 1-4 integer; R1 = C1-22 alkyl, C2-22 alkenyl, or II when n = 1; R1 = C2-20 n-valent organic group when n = 2-4.

Thus, 98.1 mmol 4-hydroxy-1-oxy-2,2,6,6-tetramethylpiperidine and 78.5 mmol dilauroyl peroxide were reacted for 6 h, 53.9 g 7.3% aqueous sodium hydroxide solution and 25 g methanol was added into the resulting reaction mixture to remove lauric acid, filtered, evaporated, 0.57 g sodium hydroborate and reacted to remove 1-undecanoxy-2,2,6,6-tetramethylpiperidin-4-one to give 4-hydroxy-1-undecanoxy-2,2,6,6-tetramethylpiperidine, 12.0 g of which

was reacted with 4.19 g diphenylcarbonate at 170-180° in the presence of potassium carbonate for 8 h to give bis(1-undecanoxy-2,2,6,6-tetramethylpiperidin-4-yl)carbonate, 0.5 parts of which was mixed with PES 120 (LLDPE) 100, calcium stearate 0.05, tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionyloxymethyl)methane 0.05, and tris(2,4-d-tert-butylphenyl)phosphite 0.05 parts, kneaded, pelletized, and pressed to give a film, showing good acid rain resistance.

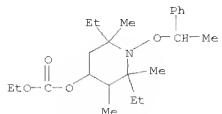
IT 705257-84-7P 863984-48-9P  
RL: IMP (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (preparation of weakly basic hindered amines having carbonate skeletons for synthetic resin compns. and coating compns. with good long term stability and acid rain and chemical resistance)

RN 705257-84-7 CAPLUS

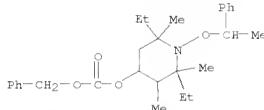


L4 ANSWER 31 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)

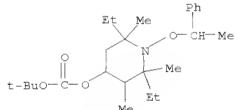
RN 362617-52-5 CAPLUS  
 CN Carbonic acid, 2,6-diethyl-2,3,6-trimethyl-1-(1-phenylethoxy)-4-piperidinyl ethyl ester (CA INDEX NAME)



RN 362617-53-6 CAPLUS  
 CN Carbonic acid, 2,6-diethyl-2,3,6-trimethyl-1-(1-phenylethoxy)-4-piperidinyl phenylmethyl ester (CA INDEX NAME)

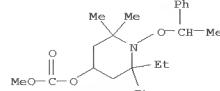


RN 362617-54-7 CAPLUS  
 CN Carbonic acid, 2,6-diethyl-2,3,6-trimethyl-1-(1-phenylethoxy)-4-piperidinyl 1,1-dimethylethyl ester (CA INDEX NAME)

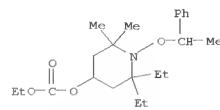


RN 362618-68-6 CAPLUS  
 CN Carbonic acid, 2,2-diethyl-6,6-dimethyl-1-(1-phenylethoxy)-4-piperidinyl methyl ester (CA INDEX NAME)

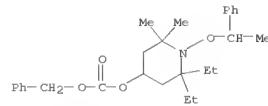
L4 ANSWER 31 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



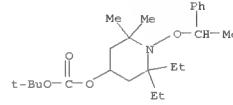
RN 362618-69-7 CAPLUS  
 CN Carbonic acid, 2,2-diethyl-6,6-dimethyl-1-(1-phenylethoxy)-4-piperidinyl ethyl ester (CA INDEX NAME)



RN 362618-70-0 CAPLUS  
 CN Carbonic acid, 2,2-diethyl-6,6-dimethyl-1-(1-phenylethoxy)-4-piperidinyl phenylmethyl ester (CA INDEX NAME)



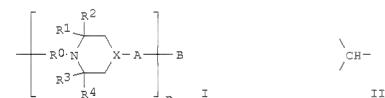
RN 362618-71-1 CAPLUS  
 CN Carbonic acid, 2,2-diethyl-6,6-dimethyl-1-(1-phenylethoxy)-4-piperidinyl 1,1-dimethylethyl ester (CA INDEX NAME)



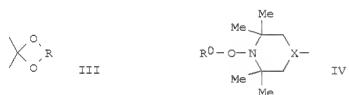
L4 ANSWER 32 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2001:564135 Document No. 135:1250350. Fire-resistant electrolyte solutions and secondary nonaqueous electrolyte batteries. Yamada, Manabu; Kubota, Naohiro (Denso Co., Ltd., Japan; Asahi Denka Kogyo K. K.). Jpn. Kokai Tokkyo Koho JP 2001210365 A 20010903, 10 pp. (Japanese). CODEN: JKXXAF

APPLICATION: JP 2000-22245 20000131.

GI



II



AB The electrolyte solns. contain an electrolyte salt dissolved in an organic solvent, which contains a piperidine derivative I, where R0 = C1-18 alkyl group; R1-4 = C1-4 alkyl groups; n = 1-6 integer; X = II or III; R =

C2-10 alkenyl group, A = -O-, -NR5- or a single bond; R5 = C1-10 alkyl group; B = H or C1-10 alkyl group that may also have ether bonding, n-valent acyl group or carbamoyl group, -CO2(R6OCOO)R7 (R6 = C2-6 alkylene group, R7 = C1-10 alkyl group that may also have ether bonding, or IV, m = 0 or 1),

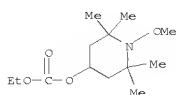
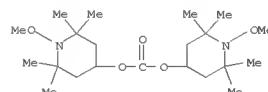
or alkylene or oxyalkylene group connected to R5. The electrolyte solns. may also contain phosphate esters.

IT 351331-30-1 351331-33-4  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fire resistant additives for electrolyte solns. in secondary lithium batteries)

RN 351331-30-1 CAPLUS  
 CN Carbonic acid, ethyl 1-methoxy-2,2,6,6-tetramethyl-4-piperidinyl ester (CA INDEX NAME)

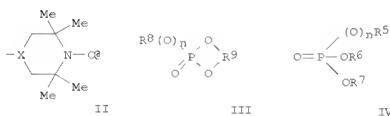
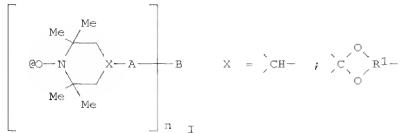
L4 ANSWER 32 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)

RN 351331-33-4 CAPLUS  
 CN 4-Piperidinol, 1-methoxy-2,2,6,6-tetramethyl-, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)

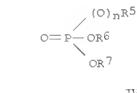


L4 ANSWER 33 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 2000:600573 Document No. 133:1960040. Fire-resistant electrolyte solutions and secondary nonaqueous electrolyte batteries. Kubota, Naohiro; Takeuchi, Yasunori (Asahi Denka Kogyo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000235867 A 20000829, 9 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1999-36258 19990215.

GI



II



III

IV

IV

AB The electrolyte solns. contain electrolyte salts and organic solvents, which includes N-oxo-2,2,6,6-tetramethyl-4-piperidine, preferably I [n = 1-6,

R1 = trivalent C2-10 alkane radical, A = -O-, -NR2- or a single bond, R2 = C1-10 alkyl group, B = H or C1-10 alkyl group which may have ether bonding, n valent acyl or carbamoyl group, or -COO-(R3OCOO)nR4, R3 = C2-6 alkylene group, R4 = C1-10 alkyl group or III]. The electrolyte salt is selected from LiPF6, LiBF4-, LiClO4, (CF3SO2)2NLi, (CF3SO2)3Li, and the solvent may also contain III or IV (R5-8 = linear or branched C1-4 (fluorinated) alkyl group, R9 = linear or branched C2-8 alkylene group, n = 0 or 1).  
 IT 6146-58-3 289499-43-0  
 RL: DEV (Device component use); USES (Uses) (electrolyte solvent mixts. containing N-oxo-2,2,6,6-tetramethyl-4-piperidine derivs. and phosphorus compds. for secondary lithium batteries)

L4 ANSWER 34 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1996:640164 Document No. 126:46848 Original Reference No. 126:9229a, 9232a  
 Organic radicals exhibiting intermolecular ferromagnetic interactions

with high probability: 4-arylmethyleneamino-2,2,6,6-tetramethylpiperidin-1-yl oxyls and related compounds. Togashi, Kensuke; Imachi, Ron; Tomioka, Katsuyuki; Tsuibo, Hidenori; Ishida, Takayuki; Nagami, Takeshi; Takeda, Naoya; Ishikawa, Masayasu (Dep. Appl. Phys. Chem., Univ. Electro-Communications, Chofu, 182, Japan). Bulletin of the Chemical Society of Japan, 69(10), 2821-2830 (English) 1996. CODEN: BCSJA8.  
 ISSN: 0009-2673. Publisher: Nippon Kagakai.

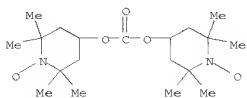
AB A series of 4-arylmethyleneamino-2,2,6,6-tetramethylpiperidin-1-yl oxyls (4-arylmethyleneamino-TEMPO) and related compds. were synthesized, and their magnetic susceptibility were measured by a SQUID magnetometer in the temperature range of 1.8-100 K. Of 165 radicals investigated, 52 kinds of radicals exhibited intermol. ferromagnetic interactions. These were confirmed by the increase of effective magnetic moments in low-temperature

regions. Pos. Weiss temps. ( $\Theta$ ), ranging from +0.03 to +0.75 K, were found for these materials. Over 100 kinds of radicals exhibited antiferromagnetic interactions with  $\Theta$  ranging from -0.01 to -24 K. The surprisingly high probability of finding organic radicals with intermol.

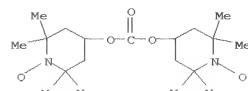
ferromagnetic interaction may be understood by the characteristic mol. arrangements in the crystals. An oxygen atom of an NO radical site of a piperidin-1-yl oxyl moiety is apt to locate near methyl- and/or methylene-hydrogens of  $\beta$ -positions of the adjacent mols., and the resultant spin polarization gives rise to parallel spin alignments of nearest NO sites in the crystals. 4-(Iodophenylmethylenamino)-TEMPO exhibited bulk ferromagnetic transition at 0.4 K. Six radicals exhibited metamagnetic transitions at magnetic fields lower than 200 Oe below 0.1 K.

IT 6146-58-3  
 RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (4-arylmethyleneamino-2,2,6,6-tetramethylpiperidin-1-yl oxyls and related organic radicals having high probability of intermol. ferromagnetic interactions)

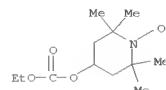
RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



L4 ANSWER 33 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



RN 289499-43-0 CAPLUS  
 CN 1-Piperidinyloxy, 4-[(ethoxycarbonyl)oxy]-2,2,6,6-tetramethyl- (CA INDEX NAME)



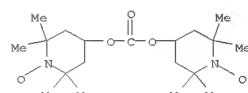
L4 ANSWER 35 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1995:364840 Document No. 122:213312 Original Reference No.

122:38991a, 38994a  
 Spin catalysis of the radical recombination reaction. Buchachenko, Anatoly L.; Ruban, Lyudmila V.; Step, Eugene N.; Turro, Nicholas J. (Institute of Chemical Physics, Russian Academy of Sciences, Moscow, 117334, Russia). Chemical Physics Letters, 233(3), 315-18 (English)

1995. CODEN: CHPLC. ISSN: 0009-2614. Publisher: Elsevier.  
 AB Rate consts. of the recombination of alkyl radicals (cianoisopropyl and sec-phenethyl radicals) with nitroxide biradicals in dioxane and Et benzene exceed rate consts. with 'parent' mono radicals by 10%-50%. The difference in reactivity is attributed to spin catalysis of the recombination reaction which occurs in the encounter pair of an alkyl radical with one of the biradical termini by the second spin-carrying terminus.

IT 6146-58-3  
 RL: PER (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent) (rate consts. of recombination of alkyl radicals with nitroxide biradicals)

RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



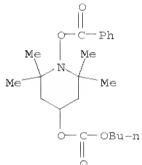
L4 ANSWER 36 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1993:8358 Document No. 118:83580 Original Reference No. 118:1703a,1706a  
 Light stabilizers for ambient cured coatings. Behrens, Rudolf A.; Mar, Andrew (Ciba-Geigy Corp., USA). U.S. US 5124378 A 19920623, 17 pp. Cont.-in-part of U.S. Ser. No. 99,420, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1988-259945 19881019. PRIORITY: US 1987-99420 19870921.

AB Derivs. of N-acyloxy or hydrocarboxy hindered piperidines of specified structure are light stabilizers for ambient-cured coatings, giving good durability and weather resistance. A tung oil-modified phenolic resin containing 5 phr bis(1-acetoxy-2,2,6,6-tetramethyl-4-piperidinyl) sebacate (I) gave coatings on red cedarwood with 60° gloss retention after 8 mo outdoor exposure 46.7%, vs. 24.2 without I, and 39.0 with bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate in place of I.

IT 137452-96-1  
 RL: USES (Uses)  
 (light stabilizers, for coatings)

RN 137452-96-1 CAPLUS

CN Carbonic acid, 1-(benzoyloxy)-2,2,6,6-tetramethyl-4-piperidinyl butyl ester (CA INDEX NAME)



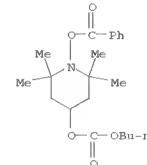
L4 ANSWER 37 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1992:512808 Document No. 117:1128080 Original Reference No. 117:19695a,19698a Polyolefin compositions stabilized with N-hydrocarbyl(carbonyloxy-substituted hindered amines. Galbo, James P.; Seltzer, Raymond; Ravichandran, Ramanathan; Patel, Ambalal R. (Ciba-Geigy Corp., USA). U.S. US 5096950 A 19920317, 18 pp. Cont.-in-part of U.S. Ser. No. 259,946, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1990-562783 19900806. PRIORITY: US 1988-259946 19881019.

AB The title stabilizers are especially useful in polyolefin films for greenhouses or swimming pool covers. Polypropylene containing a cinnamate stabilizer was mixed with 0.1% di(1-butylicarbonyloxy-2,2,6,6-tetramethylpiperidin-4-yl)2,2-diethylmalonate (I), was extruded to a film, and exposed to light to give time to failure 890 h, vs. 340 without I.

IT 137452-96-1  
 RL: USES (Uses)  
 (stabilizers, to heat and light and oxygen, for polyolefins)

RN 137452-96-1 CAPLUS

CN Carbonic acid, 1-(benzoyloxy)-2,2,6,6-tetramethyl-4-piperidinyl butyl ester (CA INDEX NAME)



L4 ANSWER 38 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1991:657520 Document No. 115:2575200 Original Reference No. 115:143797a,43800a Polymeric stabilized with N-substituted hindered amines.

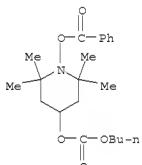
Cortolano, Frank P.; Seltzer, Raymond; Patel, Ambalal R. (Ciba-Geigy Corp., USA). U.S. US 5004770 A 19910402, 19 pp. Cont.-in-part of U.S. Ser. No. 259,955, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1989-416621 19891003. PRIORITY: US 1988-253955 19881019.

AB Compds. bearing 2,2,6,6-tetraalkylpiperidine or -piperazine groups with the hindered N atom being substituted with OH or OR (R = organic) are useful as stabilizers for polymers other than polyolefins. A PVC plate containing 1% bis(1-methoxy-2,2,6,6-tetramethylpiperidin-4-yl) isophthalate (I), had an value 2.8 (ASTM D-1923-63T) after exposing for 3014 h in a weatherometer, vs. 6.7 without I.

IT 137452-96-1  
 RL: USES (Uses)  
 (stabilizers, for polymers other than polyolefins)

RN 137452-96-1 CAPLUS

CN Carbonic acid, 1-(benzoyloxy)-2,2,6,6-tetramethyl-4-piperidinyl butyl ester (CA INDEX NAME)



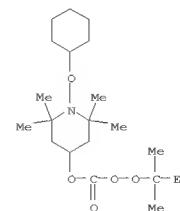
L4 ANSWER 39 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1991:82730 Document No. 114:827300 Original Reference No. 114:14149a,14152a Peroxides containing hindered amine moieties with low basicity as polymerization initiators. Seltzer, Raymond; Winter, Roland A. E.; Schirrmann, Peter J. (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP 389423 Al 19900926, 19 pp. DESIGNATED STATES: RU DE FR GB IT. (English). CODEN: EPXXDW. APPLICATION: EP 1990-810191 19900313. PRIORITY: US 1989-326353 19890321.

AB The title peroxides provide a polymer containing a hindered amine stabilizer bonded to the polymer and the low basicity of the peroxides prevents interaction with acid catalysts used in some polymerization systems. Thus, acrylate 25, 2-hydroxyethyl acrylate 30, Bu methacrylate 27, styrene 15, and acrylic acid 3% were polymerized with 6.5 g (based on 100 g monomer mixture) OO-tert-amyl-O-(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidine-4-yl) monoperoxy carbonate gave a polymer containing a hindered amine stabilizer (I). Polypropylene containing 0.2% I was molded into test pieces exhibiting good failure resistance in a fluorescent sunlight/black light failure chamber.

IT 132147-26-3  
 RL: USES (Uses)  
 (polymerization initiators, for vinyl polymers containing hindered amine stabilizers)

RN 132147-26-3 CAPLUS

CN Carbonoperoxic acid, O-[1-(cyclohexyloxy)-2,2,6,6-tetramethyl-4-piperidinyl] OO-(1,1-dimethylpropyl) ester (9CI) (CA INDEX NAME)

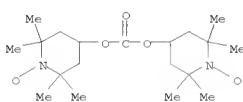


L4 ANSWER 40 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1983:575125 Document No. 99:175125 Original Reference No. 99:26849a,26852a  
 Use of the ESR half-field transition to determine the interspin distance and the orientation of the interspin vector in systems with two unpaired electrons. Eaton, Sandra S.; More, Kundalika M.; Sawant, Bhimrao M.; Eaton, Gareth R. (Dep. Chem., Univ. Colorado, Denver, CO, 80202, USA). Journal of the American Chemical Society, 105 (22), 6560-7 (English) 1983. CODEN: JACSAT. ISSN: 0002-7863.

AB For systems containing 2 unpaired electrons with g values .apprx.2 and an interspin distance of r, the intensity of the forbidden half-field transition is proportional to r-6. The hyperfine splitting of the half-field signal depends on the relative orientations of the nuclear hyperfine tensors for the 2 electrons and the orientation of the interspin vector. Thus, the r value and the relative orientations of the hyperfine tensors were determined independently, and also independently of the value of the exchange coupling constant J. The method was calibrated with 7 mols. with well-characterized geometries: a Cu dimer, 4 dinitroxyl radicals and 2 spin-labeled Cu complexes. The absolute value of J for these mols. ranged from .apprx.100 to 25 + 10-4 cm-1. Two 3-spin systems were examined. The method was also applied to a spin-labeled Cu complex for which the Cu-nitroxyl distance could not have been obtained by other ESR methods.

IT 6146-59-3  
 RL: PRP (Properties)  
 (ESR half-field transition of, interspin vector in relation to)

RN 6146-58-3 CAPLUS  
 1-Piperidinyloxy, 4,4'-[carbonylbis(oxy)]bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



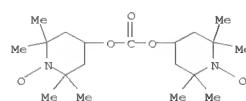
L4 ANSWER 41 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1982:519348 Document No. 97:119348 Original Reference No. 97:19657a,19660a  
 Metal-nitroxyl interactions. 23. Dinitroxyl adducts of paramagnetic metal complexes. Sawant, Bhimrao M.; Eaton, Gareth R.; Eaton, Sandra S. (Dep. Chem., Univ. Denver, Denver, CO, 80208, USA). Journal of Magnetic Resonance (1969-1992), 45 (1), 162-9 (English) 1981. CODEN: JCMRA4. ISSN: 0022-2364.

AB The characteristic EPR spectrum of a nitroxyl biradical with intermediate electron-electron exchange, changed to a 3-line mononitroxyl EPR spectrum upon coordination of anitroxyl O to the spin-1/2 metal complexes Cu(tfac)2, Cu(hfac)2, VO(tfac)2 (tfac = trifluoroacetylacetone, hfac = hexafluoroacetylacetone). Similar behavior was observed for a nitroxyl biradical with large electron-electron exchange when a nitroxyl O was coordinated to VO(tfac)2 or VO(hfac)2.

One electron from the dinitroxyl couples with the metal unpaired electron, yielding a net spin of 1/2. Thus the dinitroxyl-paramagnetic metal complex becomes a mononitroxyl. Approx. equilibrium consts. were obtained for these Lewis acid-Lewis base interactions.

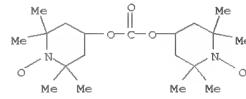
IT 6146-58-3D, copper and vanadium complexes  
 RL: PRP (Properties)

RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-[carbonylbis(oxy)]bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



IT 6146-58-3  
 RL: PRP (Properties)  
 (ESR study of interaction of, with metal complexes)

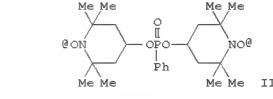
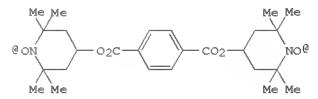
RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-[carbonylbis(oxy)]bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



L4 ANSWER 41 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)

L4 ANSWER 42 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1982:21272 Document No. 96:21272 Original Reference No. 96:3551a,3554a  
 Effect of electron spin exchange on the interaction of stable nitroxyl radicals with triplet states of cyanine dyes. Borisevich, Yu. E.; Kuz'min, V. A.; Kokorin, A. I.; Sennikov, G. P.; Novozhilova, G. A.; Shapiro, A. B. (Inst. Khim. Fiz., Moscow, USSR). Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (9), 2019-23 (Russian) 1981. CODEN: IASKA6. ISSN: 0002-3353.

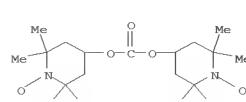
GI



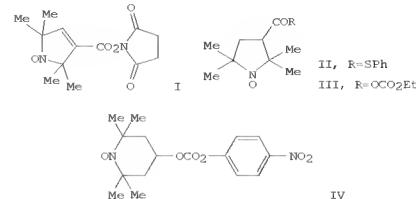
AB The efficiency of quenching of the triplet state of a cyanine dye by stable nitroxyl biradicals, as studied by flash photolysis in EtOH at 20°, increased with increasing spin exchange between the paramagnetic centers of the biradical, accompanied by a change in the quenching mechanism (formation of a charge-transfer complex). The quenching rate constant increased from .apprx.1.3 + 107 to .apprx.3.0 + 107 L/mol·s as the absolute values of the spin-exchange integral measured in hyperfine interaction constant units increased from 0.2 to 6.4.

IT 6146-58-3  
 RL: USES (Uses)  
 (quenching by, of cyanine dye triplet state)

RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-[carbonylbis(oxy)]bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



L4 ANSWER 43 OF 67 CAPLUS COPYRIGHT 2009 ACS ON STN  
1980:192981 Document No. 92:192981 Original Reference No. 92:31201a,31204a  
The study of nitroxide radical active esters as spin labels on muscle  
protein actin. Belagyi, J.; Grof, P.; Pallai, G.; Tsigyi, J. (Cent. Lab.,  
Med. Univ., Pecs, H-7624, Hung.). Acta Biochimica et Biophysica  
Academie  
Scientiarum Hungaricarum, 14(3), 183-8 (English) 1979. CODEN: ABBPAP.  
ISSN: 0001-5253.



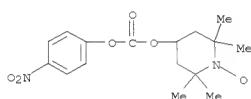
AB Nitroxide radical active esters (I, II, III, and IV) were used to label muscle actin and to study the orientation dependence of the ESR spectra of the labeled protein. The labels were located at  $\geq 2$  different sites of the protein with strong polar environment and different mobilities. The ESR spectrum of the strongly immobilized labels exhibited orientation dependence, the N-O bond axis of the spin labels being nearly perpendicular to the long axis of the F-actin threads. The labels underwent a rapid rotational motion about an axis directed perpendicular to the filament axis. The application of nitroxide radical active esters may be useful in the study of ordered systems.

IT 71645-08-4D, actin derivs.

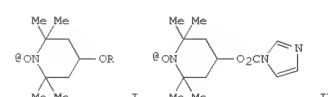
RL: PRP (Properties)  
(ESR of)

RN 71645-08-4 CAPLUS

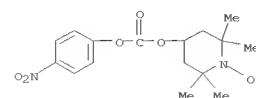
CN 1-Piperidinylxylo, 2,2,6,6-tetramethyl-4-[(4-nitrophenoxyl)carbonyl]oxy]-  
(CA INDEX NAME)



L4 ANSWER 44 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
1979;558069 Document No. 911580690 Original Reference No. 91:25525a, 25528a  
Nitroxyls; IV. Synthesis of spin-labeled  
N-(4-piperidinylloxy carbonyl)imidazoles and 4-piperidinylloxy carbonyl  
azides  
and their reaction with amino acid derivatives. Hankovszky, H. O.;  
Hideg, K.; Lax, L.; Tigray, J. (Biophys. Dep., Univ. Pecs, Pecs, 7643, Hung.).  
Synthesis (7), 730-7 (English) 1979. CODEN: SYNBF. ISSN: 0039-7881.  
C7H18-N2O5, C24H38N2O5, C24H38N2O5

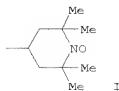


AB Treating piperidin-1-oyl I ( $R = H$ ) with carbonyldiimidazole in Et2O-THF at room temperature gave 76% imidazole II which was treated with p-MeC6H4SO3H in acetone to give 90% imidazolium tosylate whose treatment with NaN3 in H2O at room temperature gave 92% azide I ( $R = CON3$ ) (III). III was also prepared in 66% yield by treating I ( $R = COC6H4NO2-p$ ) with NaN3 in acetone/H2O at room temperature Treating III with H-X-ORL ( $X = Gly$ ,  $R1 = Et$ ;  $X = Phe, Trp, R1 = H$ ) gave 65-80% I ( $R = (O-X-ORL)$ .  
 IT 71645-08-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with sodium azide)  
 RN 71645-08-4 CAPLUS  
 CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-[(4-nitrophenoxy)carbonyl]oxy]-  
 (CA INDEX NAME)



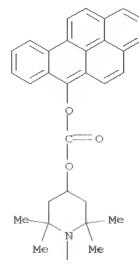
L4 ANSWER 45 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1978:89431 Document No. 88:89431 Original Reference No. 88:14011a,14014a  
 Synthesis of nitroxyl derivatives of benzo[a]pyrene. Schlude, H. (Abt. Org. Chem. Spektrosk., Max-Planck-Inst. Biochem., Martinsried, Fed. Rep. Ger.). Organic Preparations and Procedures International, 9(6), 289-96 (English) 1977. CODEN: OPPIAK. ISSN: 0030-4948.

GI



AB R1(CH2)nCO2R (R = benzo[a]pyren-6-yl, R1 = I, n = 0 or 1 throughout this abstract) were prepared by treating R1(CH2)nOH with COCl2, then treating the obtained chloroformate with ROAc. Also prepared were R1CO2R, RCO2(CH2)nR1, RCH(OH)R1, RCO2CO2Et, and RCO2R (R2 = 1H-imidazol-1-yl).  
 IT 65693-98-3P  
 RL: SPP (Synthetic preparation); PREP (Preparation)  
 (preparation and condensation with benzopyrenyl acetate)  
 RN 65693-98-3 CAPLUS  
 CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-[[[[2,2,6,6-tetramethyl-1-oxo-4-piperidinyl]carbonyl]oxy]oxy]- (9CI) (CA INDEX NAME)

L4 ANSWER 45 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



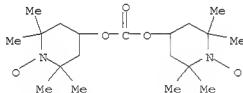
IT 65694-06-6P  
 RL: SPP (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 65694-06-6 CAPLUS  
 CN 1-Piperidinyloxy, 4-[[[benzo[a]pyren-6-yl]oxy]oxy]-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)

L4 ANSWER 46 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1977:424186 Document No. 87:24186 Original Reference No. 87:3847a,3850a  
 Acid esters of 4-piperidinol derivatives and their use as stabilizers. Murayama, Keisuke; Morimura, Shoji; Yoshioka, Takao; Horiochi, Hideo; Higashida, Susumu (Sankyo Co., Ltd., Japan). Can CA 997353 19760921, 32 pp. (English). CODEN: CAXXA4. APPLICATION: CA 1975-237404 19751010.

AB Methylated aza[5,5]spiroundecanes and acid esters of 4-piperidinol as were prepared in the presence of alcoholysis catalyst and used as heat- and light-stabilizers for polyolefins, PVC [9002-96-2], polyamides, and polyurethanes. Thus, 4-hydroxy-2,2,6,6-tetramethylpiperidine [2403-88-5] was heated with  $\text{BzOEt}$  [93-89-0] in xylene containing NaOH to give 4-benzoyloxy-2,2,6,6-tetramethylpiperidine [26275-88-7], and tetrakis(2,2,6,6-tetramethyl-4-piperidyl) pyromellitate [39111-20-1] was prepared similarly from the corresponding secondary alc. and added (0.25 parts/100 parts resin) to CM 1011 (nylon 6) [25038-54-4]. A film from this composition exhibited elongation and tensile strength retentions 73

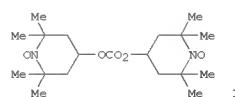
and 70%, resp., after a 300-h exposure to UV at 45°, and 73 and 76%, resp., after a 2-h aging at 160°.

IT 6146-58-3  
 RL: USES (Uses)  
 (heat- and light-stabilizers, for plastics)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-[carbonylbis(oxy)]bis[2,2,6,6-tetramethyl- (CA INDEX NAME)]

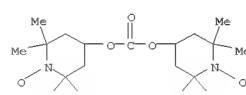


L4 ANSWER 47 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1977:121125 Document No. 86:121125 Original Reference No. 86:19123a,19126a  
 Crystal and molecular structure of a stable biradical of bis(2,2,6,6-tetramethylpiperidin-1-oxyl) carbonate C19H34N2O5. Shibaeva, R. P.; Lobkovskaya, R. M.; Rozenberg, L. P. (Otd. Inst. Khim. Fiz., Chernogolovka, USSR). Zhurnal Strukturnoi Khimii, 17(5), 876-80 (Russian)  
 1976. CODEN: ZSTKAI. ISSN: 0136-7463.

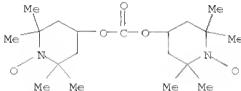
GI



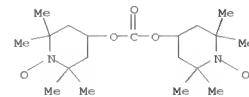
AB X-ray anal. of I yielded crystallog. data, bond lengths, and bond angles. The piperidine rings had the chair conformation. The N-O bond (1.287 Å) made an angle of 19.4° with the CNC plane. The average distance between the paramagnetic centers was 11.58 Å, whereas the intermol. distance was only 6.0-6.5 Å.  
 IT 6146-58-3  
 RL: PROC (Process)  
 (x-ray anal. of)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-[carbonylbis(oxy)]bis[2,2,6,6-tetramethyl- (CA INDEX NAME)]



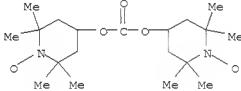
L4 ANSWER 48 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1975:42840 Document No. 82:42840 Original Reference No. 82:6809a,6812a  
 Determination of the distance between the paramagnetic fragments in  
 biradicals from the forbidden transition  $\Delta M_s = 2$ . Dubinskii, A. A.;  
 Grinberg, O. Ya.; Tabachnik, A. A.; Shapiro, A. B.; Ivanov, V. P.;  
 Rozantsev, E. G.; Lebedev, Ya. S. (Inst. Chem. Phys., Moscow, USSR).  
*Biofizika*, 19(5), 840-2 (Russian) 1974. CODEN: BIOFAI. ISSN: 0006-3029.  
 AB A method for calcn. of radical-radical distances in diradicals was  
 developed, based on the relative intensities of the EPR spectra of the  
 forbidden transition  $\Delta M_s = 2$ ; calcs. were given for 7 piperidinoxy  
 diradicals.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (radical-radical distance in, calcn. for)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



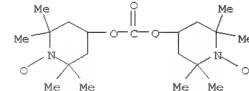
L4 ANSWER 49 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1974:551152 Document No. 81:151152 Original Reference No. 81:23565a,23568a  
 Spin exchange in nitroxyl biradicals. Metzner, E. Kurt; Libertini, Louis  
 J.; Calvin, M. (Lawrence Berkeley lab., Univ. California, Berkeley, CA,  
 USA). *Journal of the American Chemical Society*, 96(20), 6515-16  
 (English)  
 1974. CODEN: JACSAT. ISSN: 0002-7863.  
 GI For diagram(s), see printed CA Issue.  
 AB The electron spin exchange energy was measured as a function of solvent  
 and of temperature for 3 nitroxyl biradicals (I,II,III). The effect of  
 temperature  
 can be explained in terms of the flexibility of the mole. The dependence  
 of the exchange on solvent is complex and not readily interpretable;  
 however, it seems to be related to solvent polarity and the structure of  
 the bridge between radical subunits.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (spin exchange energy in, solvent and temperature effects on)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



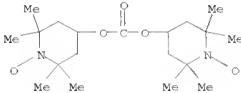
L4 ANSWER 50 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1974:424880 Document No. 81:24880 Original Reference No. 81:4021a,4024a  
 Intramolecular exchange and dipole-dipole interactions in solutions of  
 some iminoxyl biradicals. Kokorin, A. I.; Parmon, V. N.; Suskina, V. I.;  
 Ivanov, Yu. A.; Rozantsev, E. G.; Zamaraev, K. I. (Inst. Khim. Fiz.,  
 Moscow, USSR). *Zhurnal Fizicheskoi Khimii*, 48(4), 953-6 (Russian) 1974.  
 CODEN: ZFKHA9. ISSN: 0044-4537.  
 AB Dipole-dipole interactions and the exchange integrals were calculated  
 from the  
 EPR spectra of diesters of 4-hydroxy-2,2,6,6-tetramethylpiperidinoxy  
 with  
 H<sub>2</sub>SO<sub>4</sub>, H<sub>2</sub>SO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, H<sub>2</sub>CO<sub>3</sub>, and RP(O)(OH)<sub>2</sub> (R = Ph, vinyl, styryl, and  
 $\beta$ -chlorostyryl), and correlated with the distances between  
 N-O-groups. The exchange integrals depended more on the nature of the  
 ester central atom than on the nature of the substituents on it.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (dipole-dipole interactions and intermol. exchange in, EPR in relation  
 to)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



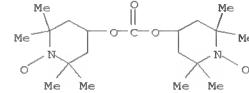
L4 ANSWER 51 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1974:121793 Document No. 80:121793 Original Reference No. 80:19616h,19617a  
 Polyolefins containing 4-piperidinol esters as uv stabilizers. Murayama,  
 Keisuke; Morimura, Shoji; Yoshioka, Takao; Horiuchi, Hideo; Higashida,  
 Susumu (Sankyo Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 48072240 19730929  
 19720428. 4 pp. (Japanese). CODEN: JKXXAF. APPLICATIONN: JP 1972-42959  
 AB Polymer stabilizers were 4-piperidinol esters I [R, R<sub>1</sub> = alkyl, R<sub>2</sub> =  
 saturated alicyclic member: CH<sub>2</sub>CMe<sub>2</sub>NR<sub>2</sub>CMe<sub>2</sub>CH<sub>2</sub>, R<sub>2</sub> = O radical, lower  
 alky, R<sub>3</sub> = aliphatic or aromatic acyl (n=1), diacyl (n=2), triacyl or trivalent  
 P(O) or P  
 (n=3), tetraacyl or Si (n=4)]. For example, a high d. polyethylene  
 [9002-88-4] sheet (0.5 mm thickness) containing 0.25 phr  
 1-aza-4-benzoyloxy-1,2,2-trimethylspiro[5.5]undecane I (R<sub>1</sub> = (CH<sub>2</sub>)<sub>5</sub>, R<sub>2</sub>  
 = Me, R<sub>3</sub> = Bz, n = 1] [51249-12-8] had uv resistance (time to brittle in a  
 fadeometer at 45.deg.) 1800 hr, compared with 400 hr for a film not  
 containing  
 the stabilizer.  
 IT 6146-58-3  
 RL: USES (Uses)  
 (stabilizers, toward uv light, for polyolefins)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



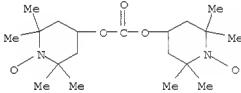
L4 ANSWER 52 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1974:107500 Document No. 80:107500 Original Reference No. 80:17283a,17286a  
 Evidence for slow exchange in ESR spectra of nitroxide biradicals.  
 Parmon, V. N.; Kokorin, A. I.; Zhidomirov, G. M.; Zamaraev, K. I. (Inst. Chem. Phys., Moscow, USSR). Molecular Physics, 26(6), 1565-9 (English) 1973. CODEN: MOPHAM. ISSN: 0026-8976.  
 AB The ESR spectra of bis(2,2,6,6-tetramethylpiperidinol-1-oxyl) sulfide (I) and carbonate (II) were measured in PhMe solns. at 17-71°. The ESR spectra of II were also measured in CCl<sub>4</sub>, C<sub>6</sub>H<sub>6</sub>, EtOH, Me<sub>2</sub>CO, and PhMe at 25°. The spectra of biradicals I and II were attributed to fast and slow exchange, resp.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (ESR of, slow exchange in)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



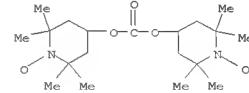
L4 ANSWER 53 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1972:565545 Document No. 77:165545 Original Reference No. 77:27191a,27194a  
 4-Piperidinol derivatives as stabilizers for polymers. Murayama, Keisuke; Morimura, Syoji; Yoshioka, Takao; Horiuchi, Hideo; Higashida, Susumu (Sankyo Co., Ltd.), Ger. Offen. DE 1972-2204659 19720128, 35 pp. (German). CODEN: GWXXBX APPLICATION: DE 1972-2204659 19720128.  
 AB Twenty-five title compds. [I; n = 1; R = H or Me; R<sub>1</sub> = R<sub>2</sub> = Me; R<sub>1</sub>R<sub>2</sub> = (CH<sub>2</sub>)<sub>5</sub>, CH<sub>2</sub>Me-2NHMe-CH<sub>2</sub>, or CH<sub>2</sub>Me-2NMe-CH<sub>2</sub>; R<sub>3</sub> = Ac, n-C<sub>17</sub>H<sub>35</sub>CO, p-C<sub>1</sub>C<sub>6</sub>H<sub>4</sub>CO, p-H<sub>2</sub>N-C<sub>6</sub>H<sub>4</sub>CO, or  $\beta$ -C<sub>10</sub>H<sub>7</sub>CO; or n = 2-4; R = H; R<sub>1</sub> = R<sub>2</sub> = Me; R<sub>3</sub> = CO, COCO, CO(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>CO, CO(CH<sub>2</sub>)<sub>4</sub>CO, o- and p-(OC)<sub>4</sub>C<sub>6</sub>H<sub>4</sub>, P, PO, 1,3,5-(OC)<sub>3</sub>C<sub>6</sub>H<sub>3</sub>, Si, or 1,2,4,5-(OC)<sub>4</sub>C<sub>6</sub>H<sub>2</sub>] or their N-oxides were prepared by reaction of I (n = 1, R<sub>3</sub> = H) with R<sub>3</sub>(OR<sub>4</sub>)<sub>n</sub> (R<sub>4</sub> = Me or Et). I were used at 0.2-0.5% concns. in polymers, e.g. Geon 103 EP [poly(vinyl chloride)] [9002-86-2] or polyethylene (II) [9002-88-4], as heat and light stabilizers. Thus, a small amount KOH was added to I (n = 1, R<sub>2</sub> = Me, R<sub>3</sub> = H) and BzOEt in xylene, the mixture heated at 120.deg. with complete removal of EtOH formed, and kept 2 hr at 140.deg. to give 4-benzoyloxy-1,2,2,6,6-pentamethylpiperidine (III) [16597-34-5]. Plates (0.5 mm thick), made from II containing 0.25% III were heated at 45.deg. under uv irradiation. The samples became brittle after 1420 hr as compared with 400 hr for II containing no III.  
 IT 6146-58-3  
 RL: USES (User)  
 (light stabilizers, for plastics)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



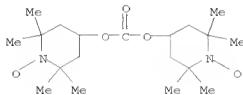
L4 ANSWER 54 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1972:78698 Document No. 76:78698 Original Reference No. 76:12651a,12654a  
 Nitroxides. XLVI. Determination of the N-O stretching frequency in piperidinic nitroxide free radicals. Morat, C.; Rassat, A. (Lab. Chim. Org. Phys., C.E.N. Grenoble, Grenoble, Fr.). Tetrahedron, 28(3), 735-40 (French) 1972. CODEN: TETRAB. ISSN: 0040-4020.  
 AB By a comparison of the ir spectra of piperidinic nitroxide radicals with spectra of the corresponding <sup>15</sup>N-labeled radicals, the ir frequency of the N-O stretching vibration was measured.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (ir spectrum of)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



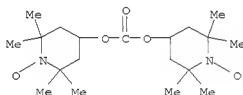
L4 ANSWER 55 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1971:456467 Document No. 75:56467 Original Reference No. 75:8903a,8906a  
 Asymmetric line broadening in the electron resonance spectra of biradicals. Luckhurst, G. R.; Pedulli, G. F. (Dep. Chem., Univ. Southampton, Southampton, UK). Molecular Physics, 20(6), 1043-55 (English) 1971. CODEN: MOPHAM. ISSN: 0026-8976.  
 AB At high temps. the dominant relaxation process which dets. the linewidths in the electron resonance spectra of flexible biradicals is modulation of the scalar electron-electron exchange interaction. In systems of high viscosity, the modulation of the exchange interaction is often quenched, and the rotational modulation of the anisotropic magnetic interactions now constitutes the principal relaxation mechanism. A theoretical expression is derived for the broadening which results from this relaxation process. The applications of the theory to the determination of mol. configurations, electron-electron separations, and the sign of the exchange interaction are illustrated by comparison with the electron resonance spectrum of bis(2,2,6,6-tetramethyl-piperidinol-1-oxyl)carbonate. The theory is also of value in understanding the spectra of partially immobilized biradical spin labels.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of, line-broadening in relation to structure of)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



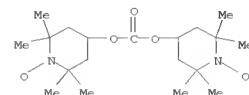
L4 ANSWER 56 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1970:116329 Document No. 72:116329 Original Reference No. 72:20967a,20970a  
 Symmetric linewidth variations in the electron resonance spectra of  
 biradicals. Luckhurst, Geoffrey R.; Pedulli, G. F. (Dep. Chem., Univ.  
 Southampton, Southampton, UK). Molecular Physics, 18(3), 425-8 (English)  
 1970. CODEN: MOPHAM. ISSN: 0026-8976.  
 AB Linewidth variations exhibited by the nitroxide biradical  
 bis(4-hydroxy-2,2,6,6-tetramethylpiperidinoxy) carbonate were reported.  
 The singlet and triplet linewidths increased with increasing  
 temperature, and  
 although the singlet lines never sharpened, the triplet lines decreased  
 in  
 width at  $\text{approx. } 410^\circ\text{K}$ . The results, which indicated that the  
 spectral d. must increase with increasing temperature, were interpreted  
 by using  
 a 2-configuration model.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of, symmetric line width variations in)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



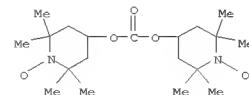
L4 ANSWER 58 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1968:456158 Document No. 69:56158 Original Reference No. 69:10495a, 10498a  
 Electron paramagnetic resonance spectroscopic study of nitroxide mono-  
 and  
 bi-radicals. Lemaire, Henri Commis. Energ. At. (Fr.), Rapp., CEA-R  
 3119, 108 pp. Avail. CEA. (French) 1967. CODEN: CMEAQ.  
 AB The hyperfine E.P.R. spectrum of nitroxide monoradicals is dominated by  
 magnetic interaction of electrons with the N nucleus. Only the magnitude of  
 the isotropic, or contact, interaction is measurable due to free  
 tumbling. This magnitude depends on the structure and is altered by the  
 solvent. The anisotropic, or dipole, interaction gives the values of the  
 hyperfine tensor and the g-factor. For nitroxide bi-radicals, the  
 hyperfine spectrum also depends on an exchange between singlet and  
 triplet  
 states of the dimer. The sign of this exchange can be evaluated. In  
 both  
 mono- and biradicals, increased solvent viscosity causes line-broadening.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of, exchange in relation to)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



L4 ANSWER 57 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1968:463449 Document No. 69:63449 Original Reference No. 69:11867a,11870a  
 Is the terephthalic acid diester of  
 4-hydroxy-2,2,6,6-tetramethyl-piperidinoxy a strong (spin) exchange or  
 weak (spin) exchange biradical. Lemaire, H.; Rassat, A.; Rey, P.;  
 Luckhurst, G. R. (Lab. Chim. Org. Phys., C.E.N., Grenoble, Fr.).  
 Molecular  
 Physics, 14(5), 441-7 (French) 1968. CODEN: MOPHAM. ISSN: 0026-8976.  
 GI For diagram(s), see printed CA Issue.  
 AB E.P.R. spectra were measured at room temperature on 5 + 10-4M solns. of  
 •RH (I), p-[•RC(:O)]2C6H4 (II), •RC(:O)CH:CH:C(:O)R (III),  
 •RC(:O)(CH2)4C(:O)R (IV), and•RC(:O)OR (V) in  
 Me2NCHO. II and III exhibited spectra with 3 equal lines; IV, 5 lines  
 of  
 electron resonance line intensities of I to those of II-V were 1.925,  
 2.202, 0.584, and 0.669 for II, III, IV, and V (0.666 is the theoretical  
 ratio for intermediate or strong exchange). II and III exhibit weak spin  
 exchange; IV, strong spin exchange; V, intermediate spin exchange.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



L4 ANSWER 59 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1968:414757 Document No. 69:14757 Original Reference No. 69:2791a  
 Nitroxides. XXVI. Effect of temperature on the spectral hyperfine  
 structure of the nitroxide biradicals. Lemaire, Henri; Rassat, Andre;  
 Rey, Paul (Lab. Chim. Org. Phys., C.E.N., Grenoble, Fr.). Bulletin de la  
 Societe Chimique de France (3), 886-92 (French) 1968. CODEN: ESCFAS.  
 ISSN: 0037-8968.  
 AB The biradicals for study were prepared by treating 2 mols.  
 2,2,6,6-tetramethyl-4-piperidinol 1-oxide with 1 mol. of a diacyl halide.  
 The esters prepared were carbonate (I), fumarate (m. 184°), oxalate  
 (II), succinate (III), glutarate (m. 107°), adipate, pimelate,  
 suberate (m. 126°), sebacate, terephthalate (IV), and  
 2-norbornene-trans-5,6-dicarboxylate (m. 192°). All except II were  
 purified by chromatog. in C6H6 on Al2O3 (activity III). E.P.R. spectra  
 were obtained for solns. in MeCN. Temperature was controlled to  
 $\pm 2^\circ$ . Throughout the range of  $-100^\circ$  to  $+130^\circ$ , IV  
 showed but 3 lines separated by 15.6 oe., the same as for the parent  
 radical.  
 Little or no exchange is evident. I on the other hand shows a hyperfine  
 splitting, with 7 major lines and 6 satellites. All other mols. showed a  
 variation with temperature. As an example, III at low temperature ( $-56^\circ$ )  
 has 3  
 lines separated by 15.6 oe.; a 2nd set of lines begins to appear at  
 $\text{approx. } -2^\circ$ , and at  $-8^\circ$ , 7 lines are visible. These increase in  
 intensity to the highest measurement temperature,  $144^\circ$ . The changes are  
 attributed to changes in mol. conformation.  
 IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of, conformation in relation to)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



L4 ANSWER 60 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1967:486393 Document No. 67:86393 Original Reference No. 67:16266h,16267a  
 Spin exchange in nitroxide biradicals. Glarum, Sivert H.; Marshall,

James H. (Bell Telephone Labs., Inc., Murray Hill, NJ, USA). Journal of Chemical Physics, 47(4), 1374-8 (English) 1967. CODEN: JCPSA6. ISSN: 0021-9606.

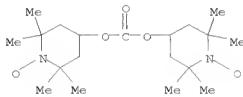
AB The dependence of the electron spin-exchange energy on temperature and solvent has been studied for the carbonate, oxalate, and succinate diesters of tetramethylpiperidinoloxyl. An analysis is given of exchange effects on E.S.R. line positions, intensities, and widths. For the carbonate diester

the exchange energy is constant at low temps. As the temperature is raised this energy gradually decreases, passes through a min., and then increases exponentially. Interpretation suggests that at low temps. exchange occurs through an indirect process involving the core of  $\sigma$  electrons, whereas at high temps. a direct exchange process is more important.

IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of, spin exchange energy and)

RN 6146-58-3 CAPLUS

CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



L4 ANSWER 61 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1967:463572 Document No. 67:63572 Original Reference No. 67:11918h,11919a  
 Nitroxides. XX. Electron paramagnetic resonance of a nitroxide biradical: determination of the exchange sign. Lemaire, Henri (C.E.N., Grenoble, Fr.). Journal de Chimie Physique, 64(3), 559-71 (French) 1967. CODEN: JCPOQY.

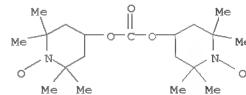
GI For diagram(s), see printed CA Issue.  
 AB cf, 67: 43656u. E.P.R. spectra of dilute solns. of bis(2,2,6,6-tetramethyl-4-hydroxypiperidine 1-oxide) carbonate (I) in dimethylformamide and in p-azoxyanisole were studied as a function of temperature. For this biradical the electron-electron exchange interaction and

the electron-nuclei hyperfine interactions are of the same order of magnitude. In the isotropic phase the spectrum shows 6 lines due to 15N, each line having an electronic or a nuclear degeneracy. The exchange interaction,  $J$ , is found to be temperature dependent, due to conformational changes of I. Different conformations can be assumed either by inversion of one or both piperidine rings, or through their rotation around C=O bonds. The results are consistent with the lower-energy conformation having both hexaax. rings in the chair form and being stretched so that the distance between the 2 N-O groups is maximum. In the nematic mesophase of p-azoxyanisole where the electron-electron dipolar interaction is not averaged out, the degeneracy of the electronic transitions  $M_s = 0 \leftrightarrow M_s = \pm 1$  is removed, and the main lines of the isotropic spectrum are split into doublets. The results are discussed in terms of the anisotropic tensors of nitroxide monoradicals and of the conformation of I. The shift of the lines is used to determine the relative sign (opposite) of

the singlet-triplet splitting  $J$  and of  $D_{zz}$  in the electron-electron dipolar tensor. Marked differences in the linewidths of various hyperfine lines result from temperature modulation, either of  $J$  or of the anisotropies.

These differences provide a check on the sign of  $J$  and on the conformation of I as determined from the nematic phase results. The ground state of the biradical I is a singlet.

IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)



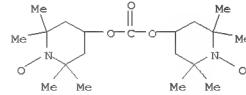
L4 ANSWER 61 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)

L4 ANSWER 62 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1967:459414 Document No. 67:59414 Original Reference No. 67:11163a,11166a  
 Temperature influence on the electron paramagnetic resonance spectrum of a

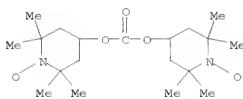
nitroxide biradical. Lemaire, Henri; Levy, Bernard; Rassat, Andre (C.E.N., Grenoble, Fr.). Colloques Internationaux du Centre National de la Recherche Scientifique, Volume Date 1966, 164, 401-18 (French) 1967. CODEN: COINAV. ISSN: 0366-7634.

AB The E.S.R. spectrum of a nitroxide biradical, in which the  $J$ -vector,  $S_1$ -vector,  $S_2$  exchange interaction is of the same order of magnitude as the  $A$ -vector,  $I_1$ -vector,  $I_2$  isotropic interaction, is composed of 6 lines when the N nucleus is 15N. The influence of temperature on the spectrum of such a compound dissolved in HCONMe<sub>2</sub> was studied. The splittings and the linewidths depend strongly on the temperature. This is because the conformation of the biradical is temperature-dependent and the anisotropies of the Lande factor and the dipolar electron-nucleus and electron-electron interactions contribute to the linewidths. A crude theory suggests that a crossed term between the electron-electron dipole interaction and the anisotropy of the g factor explains the difference observed in linewidth between the  $S_z = 0 \leftrightarrow S_z = +1$  and  $S_z = 0 \leftrightarrow S_z = -1$  transitions. 26 references.

IT 6146-58-3  
 RL: PRP (Properties)  
 (electron spin resonance of, hyperfine structure in, temperature and)  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)

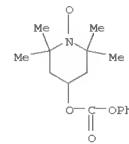


L4 ANSWER 63 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1967:2881 Document No. 66:2881 Original Reference No. 66:667a,670a  
 Inhibition of radical polymerization with nitroxide mono- and biradicals.  
 Ruban, L. V.; Buchachenko, A. L.; Neiman, M. B.; Kokhanov, Yu. V.  
 Vysokomolekulyarnye Soedineniya, 8(9), 1642-6 (Russian) 1966. CODEN:  
 VMSDA8. ISSN: 0042-9368.  
 AB Exptl. behavior of the title radicals upon reaction with alkyl radicals  
 on  
 chain propagation are described. The structural formulas of both  
 nitroxide mono- and biradicals are given. Kinetic measurements of the  
 inhibiting effect of the monoradicals on styrene polymerization at  
 50°, initiated by azodisobutyronitrile, were carried out. The  
 linear termination constant was found to be  $2.1-3.2 \times 104$  l./mole/sec.  
 (±5%). In general, it was found that nitroxide monoradicals with  
 different substituents have almost equal inhibiting effects. As for  
 biradicals, a scheme for the recombination of alkyl radicals (like  
 cyanoisopropyl and methylbenzyl) with nitroxide biradicals is suggested.  
 The  $k_2/k_1$  values for these biradicals are determined and tabulated. It  
 is  
 shown that the spin reactivity in the biradicals exceeds that in the  
 monoradicals. This fact is explained on the basis of adiabaticity of the  
 recombination.  
 IT 6146-59-3  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)

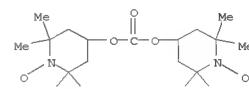


L4 ANSWER 65 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1966:35200 Document No. 64:35200 Original Reference No. 64:6455f-h,6456a-f  
 Nitroxides. XVII. Stable biradicals in the nitroxide series. Briere,  
 Roselyne; Dupeyre, Rose-Marie; Lemaire, Henri; Morat, Claude; Rassat,  
 Andre; Rey, Paul. Bulletin de la Societe Chimique de France 3290-7  
 (French) 1965. CODEN: BSCFAS. ISSN: 0037-8988.  
 GI For diagram(s), see printed CA issue.  
 AB cf. Preceding abstract. Condensation of triacetamine (I) with  $\text{H}_2\text{NNH}_2$  in  
 refluxing  $(\text{HOCH}_2\text{CH}_2)_2\text{O}$  gives 50% azine (II), m. 136°. Oxidation of II  
 with  $\text{H}_2\text{O}_2$  in the presence of phosphotungstic acid gave a mixture  
 (separated by  
 chromatography on  $\text{Al}_2\text{O}_3$ ) of the monoradical (V), m. 144°, and the  
 biradical (IV), m. 184°. With excess  $\text{H}_2\text{O}_2$  in basic medium, the  
 yields are 23% IV and 47% V, for 3-hr. stirring at ordinary  
 temperature. IV  
 can also be obtained by the same oxidation process from V in aqueous  
 solution, or by  
 direct condensation of  $\text{H}_2\text{NNH}_2$  to give III in refluxing  $(\text{HOCH}_2\text{CH}_2)_2\text{O}$  in  
 16.6% yield. In the same way, condensation between 2 moles  
 2,2,5,5-tetramethyl-3-pyrrolidone (VI) and 1 mole  $\text{H}_2\text{NNH}_2$  yields 43%  
 corresponding azine (VII), m. 157°. Oxidation of VII by  $\text{H}_2\text{O}_2$  in the  
 presence of phosphotungstic acid gives, after 4 hrs., an orange  
 precipitate, mixture of IX and X, separated by recrystn. in petroleum  
 ether,  
 where X only is soluble. The aqueous solution, ether-extracted, also  
 gives crystals,  
 mxts. of IX and X, separable by chromatography on  $\text{Al}_2\text{O}_3$ . IX, m.  
 198°, and X, m. 147°, are obtained in 40 and 19% yield,  
 resp. IX can also be produced by condensation of 2 moles of the radical  
 ketone VIII and 1 mole  $\text{H}_2\text{NNH}_2$  in  $(\text{HOCH}_2\text{CH}_2)_2\text{O}$  solution in 14% yield.  
 Condensation of 2,2,6,6-tetramethyl-piperidin-4-ol (XI) with  
 $\text{COCl}_2$ ,  $(\text{COCl})_2$ , or  $\text{p-C}_6\text{H}_4\text{COCl}$  gives the corresponding carbonate  
 (XII)  
 (m. 130°), oxalate (XIII) (m. 177°), or terephthalate (XIV)  
 (m. 215°), obtained in 53, 50%, and 69% yields, resp. IV and XII,  
 with the nitroxide 14N replaced by 15N ( $\text{I} = 1/2$ ), have also been  
 prepared,  
 starting from 15NH4Cl. With the biradicals prepared (IV, IX, XII-XIV),  
 it  
 is possible to check the different predictions of theory, according to  
 the  
 relative magnitudes of the interaction  $J$ , between the 2 unpaired  
 electrons, and the hyperfine splitting  $aN$ . If  $J \ll aN$ , the E.P.R.  
 spectrum is composed of 3 equal lines, as in the monoradical (XIII, XIV).  
 If  $J \gg aN$ , the hyperfine E.P.R. spectrum consists of 5 lines, with  
 resp. intensities 1:2:1:2:1, as if each electron spent 1/2 the time on  
 each N nucleus, the hyperfine splitting being reduced to  $aN/2$ : this is  
 the  
 case for IV, where the 7.40 oe. splitting is exactly 1/2 the hyperfine  
 splitting measured for the monoradical V in the same solvent ( $\text{Me}_2\text{NCO}$ ),  $aN$   
 = 14.80 oe. The band widths (oe.) (2.40 for IV and 2.2 for V) are quite  
 similar, which shows that dipolar interaction between the unpaired  
 electrons contributes little to the band width in a solution with little  
 viscosity. When the E.P.R. spectrum of IV with 15N is performed, the  
 expected 1:2:1 triplet, due to interaction only with the nitroxide N, is  
 obtained with a splitting of 10.5 oe., normal for this isotopic  
 substitution. The intermediate case which was also recorded shows the  
 predicted outer satellites, 6 for 14N and 2 for 15N, in the E.P.R.  
 spectra  
 of XII and its 15N derivative, with  $J/aN = 1.85$ ;  $aN = 15.6$  oe. (14N),  
 and  $J/aN$

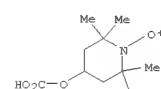
L4 ANSWER 64 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1966:60641 Document No. 64:60641 Original Reference No. 64:11401g-h,11402a  
 Stabilization of polyurethans. (Toyo Spinning Co., Ltd.) NL 6502388  
 19650827, 18 pp. (Unavailable). PRIORITY: JP 19640226.  
 AB Polyurethans are stabilized against light and gases or vapors by mixing  
 them (at any desired stage in the preparation or processing, but  
 preferably in  
 solution in a polar solvent) with 5-30 g./kg. of a phenylthiourea of  
 formula  
 $\text{X}_2\text{C}_6\text{H}_4\text{NHCNSNR}'_2$ , in which X is H, a halogen, or an alkyl, aryl, or aralkyl  
 group; X' is H, alkyl, aryl or aralkyl; R is H or Cl-4 alkyl; X and X'  
 may  
 contain halogen or Cl-4 alkyl-substituted Ph; and (or) 0.3-20 g./kg. of  
 an  
 anhydride of a carboxylic acid with a dissociation constant at 25° of  
 10<sup>-4</sup> to 10<sup>-5</sup>. Thus, a prepolymer was prepared by stirring 1 hr. at  
 85° of a mixture of 40 parts poly(tetramethylene ether) glycol (mol.  
 weight 100) and 20 parts methylenebis(4-phenyl isocyanate). The product  
 was  
 dissolved in  $\text{HCONMe}_2$  (I) and cooled to 0°. A solution of 2 parts  
 $\text{N}_2\text{H}_4 \cdot \text{H}_2\text{O}$  in 50 parts I was added, the mixture stirred for 15 min., and  
 the  
 reaction stopped by addition of 3 parts of a 10% solution of  
 monoethanolamine in  
 I. To 10 parts of the solution, 0.03 part diphenylthiourea was added,  
 and  
 the mixture extruded at room temperature into a dry spinning column at  
 180°. In a standardized burning test, the thread was rated 4 (5  
 meaning no discoloration, and 1 severe discoloration). The same sample,  
 but containing no diphenylthiourea, was rated 1.  
 IT 7392-64-5, Carbonic acid, phenyl ester, ester with  
 4-hydroxy-2,2,6,6-tetramethylpiperidinoxy  
 (polyoxymethylene stabilization with polyamides and)  
 RN 7392-64-5 CAPLUS  
 CN Piperidinoxy, 4-hydroxy-2,2,6,6-tetramethyl-, phenyl carbonate (ester)  
 (SCI) (CA INDEX NAME)



L4 ANSWER 65 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)  
 = 1.32;  $aN = 21.90$  oe. (15N). The value of  $J$  depends upon both solvent  
 $(\text{C}_6\text{H}_6, \text{MeCN}, \text{Me}_2\text{SO}, \text{Me}_2\text{NCO}, \text{H}_2\text{NCHO})$  and temp.  
 IT 6146-59-3  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyloxy, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA  
 INDEX NAME)



IT 875835-02-2, Piperidinoxy, 4-hydroxy-2,2,6,6-tetramethyl-,  
 carbonate (ester)  
 (magnetic resonance absorption of)  
 RN 875835-02-2 CAPLUS  
 CN Oxonium, [4-(carboxyloxy)-2,2,6,6-tetramethyl-1-piperidinyl]- (CA INDEX  
 NAME)



and  $J/aN$

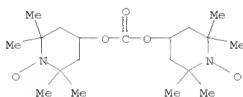
L4 ANSWER 66 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1965:403240 Document No. 63:3240 Original Reference No. 63:574b-c New  
 stable iminoyl radicals. Rozantsev, E. G.; Golubev, V. A.; Neiman, M.  
 B.; Kokhanov, Yu. V. (Inst. Chem. Phys., Moscow). Izvestiya Akademii  
 Nauk SSSR, Seriya Khimicheskaya (3), 572-3 (Russian) 1965. CODEN: IASKA6.  
 ISSN: 0002-3353.

AB 2,2,6,6-Tetramethyl-4-hydroxypiperidin-1-oxyl radical in C6H6 was treated  
 with (CH2)6(NCO)2 and after heating 4 hrs. gave  
 bis(2,2,6,6-tetramethylpiperidin-1-oxyl) hexamethylenedicarbamate, pink,  
 m. 115-16°; similarly, reactions with dichlorides of dicarboxylic  
 acids in pyridine gave the corresponding esters of the above alc. with  
 indicated acids: carbonic, m. 180°; oxalic, m. 179°;  
 succinic, m. 141°; adipic, m. 122°; pimelic, m. 90°;  
 sebacic, m. 101°; terephthalic, m. 217°. Also reported was  
 N,N'-bis(2,2,6,6-tetramethyl-4-piperidin-1-oxyl)-urea, m. 198-9°,  
 prepared by oxidation of the dipiperidyl analog by means of MnO2. The  
 E.P.R. spectra of the products were reported. The spectra showed changes  
 in electronic interaction with changes in distances between the  
 paramagnetic centers.

IT 6146-58-3 (Derived from data in the 7th Collective Formula Index (1962-1966))

RN 6146-58-3 CAPLUS

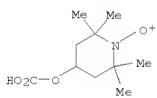
CN 1-Piperidinyl, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)]



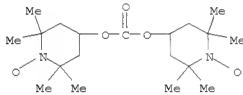
IT 875835-02-2F, Piperidinoxy, 4-hydroxy-2,2,6,6-tetramethyl-,  
 carbonate (ester)  
 RL: PREP (Preparation)  
 (preparation of)

RN 875835-02-2 CAPLUS

CN Oxonium, [4-(carboxyxy)-2,2,6,6-tetramethyl-1-piperidinyl]- (CA INDEX NAME)



L4 ANSWER 67 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN (Continued)



L4 ANSWER 67 OF 67 CAPLUS COPYRIGHT 2009 ACS on STN  
 1965:403239 Document No. 63:3239 Original Reference No. 63:573f-h,574a-b  
 Condensation of 5-nitro-2-furaldehyde with 4-methyl- or 4-ethylpyridine.  
 Harada, Kinji; Emoto, Sakae (Inst. Phys. Chem. Res., Tokyo). Chemical &  
 Pharmaceutical Bulletin, 13(3), 389-91 (English) 1965. CODEN: CPBTAL.  
 ISSN: 0009-2363.

GI For diagram(s), see printed CA Issue.  
 AB The condensation of 5-nitro-2-furaldehyde (I) with 2-methyl- (II) and  
 4-methylpyridine (III) and with 2-ethyl- (IV) and 4-ethylpyridine (V) was  
 studied in order to obtain potential antibacterial agents. While  
 condensation of I with III and V on being heated 2 hrs. at 100° in  
 Ac2O has been reported (Belg. 615,319, CA 58, 11333h) to give VI and VII,  
 reinvestigation of these expts. has given only *apprx.* 10% yields crude VI  
 and VII, the purification of which was very difficult. Improved yields  
 were now obtained by using a mixture of AcOH and Ac2O as solvent. To

4.7 g. I and 3.2 g. III (dried 12 hrs. over KOH) in 20 ml. AcOH was added slowly  
 during 20 min. 5 ml. Ac2O at 60-70° with stirring, the solution heated  
 3 hrs. at 108° with stirring and cooled, the precipitate filtered off

[the filtrate (A) was kept] and extracted with 600 ml. hot MeOH, and the  
 extract treated with C and evaporated in vacuo to give crude VI; filtrate A  
 evaporated in vacuo, the residue poured into dilute HCl cooled in ice, and the  
 precipitate filtered off and washed with saturated aqueous NaHCO3 and H2O gave crude  
 VI;

recrystn. of combined crude VI (3.5 g.) from MeOH gave 2.1 g. VI, m.  
 163-4°. To 2 g. I and 1.52 g. V in 8 ml. AcOH was added slowly 1.4  
 ml. Ac2O at 70° with stirring, the solution heated and stirred 3 hrs.  
 at 110° and evaporated in vacuo, and the residue worked up like VI to  
 give 1.18 g. VII, m. 150-151° (MeOH). Similar condensation of I with  
 II and IV gave VIII, m. 176-7°, and IX, m. 149-9.5°, resp.

To 1.5 g. I and 2 g. III (dried 12 hrs. over KOH) was added 6 ml. Ac2O  
 (spontaneous temperature rise), the mixture let stand overnight at room  
 temperature,

heated 4 hrs. at 50-5°, and cooled, and the precipitate filtered off and  
 washed with 30 ml. Et2O to give 1.05 g. 5,5'-dinitro-2,2'-furoin  
 diacetate

(X), m. 253-4° (HCON(Me2)). This reaction also proceeded in the  
 presence of V or 3-methylpyridine in lieu of III. VI-IX showed  
 antibacterial action.

IT 6146-58-3 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 6146-58-3 CAPLUS  
 CN 1-Piperidinyl, 4,4'-(carbonylbis(oxy))bis[2,2,6,6-tetramethyl- (CA INDEX NAME)]

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